BLM LIBRARY
88028571

SHOSHONE-EUREKA
RESOURCE MANAGEMENT PLAN
AND
ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN, NEVADA

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

#9796166
88028571

HD
243
.N3
S56
1983

INT DEIS 83-40

DRAFT RESOURCE MANAGEMENT PLAN
AND ENVIRONMENTAL IMPACT STATEMENT

for the

SHOSHONE-EUREKA RESOURCE AREA
NEVADA

Prepared by the

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN DISTRICT

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

Edward F. Spang
Nevada State Director

The proposed resource management plan is a long-range plan to manage 4.3 million acres of public land within the Shoshone-Eureka Resource Area. The plan has been prepared in response to Sections 202 and 603 of the Federal Land Policy and Management Act of 1976 that require the Bureau of Land Management to develop land use plans for the public lands and to study the suitability of certain lands for wilderness designation. An integral environmental impact statement assesses the environmental consequences of the plan.

This document is both the draft environmental impact statement for the resource management plan and the draft for a separate legislative final environmental impact statement for wilderness. Wilderness recommendations in the plan are preliminary and subject to change during administrative review. A wilderness technical report containing the wilderness study area-specific analyses required by the Bureau´s wilderness study policy is available upon request.

For further information contact: H. James Fox, District Manager, Bureau of Land Management, P.O. Box 194, Battle Mountain, Nevada 89820 or telephone (702-635-5181).

Date by which comments must be received: SEP 21 1983

TABLE OF CONTENTS

SUMMARY
Chapter 1 INTRODUCTION, PLANNING ISSUES, AND PLANNING CRITERIA 1-1
Introduction.................1-1
The Planning Process.........1-2
Planning Issues..............1-2
Planning Criteria............1-3

Chapter 2 ALTERNATIVES INCLUDING THE PREFERRED RESOURCE MANAGEMENT PLAN.......2-1
Introduction.................2-1
Alternatives Considered..2-1
Alternative Considered and Eliminated..............2-1
Resource Conflict Areas..2-2
Overview of the Alternatives............2-7
The Preferred Resource Management Plan.............2-8
Theme....................2-8
Wilderness...............2-8
Land Tenure Adjustments..2-8
Utility Corridors........2-11
Woodlands................2-12
Livestock Use, Wild Horse Use, and Wildlife Habitat Management.............2-12
The Resource Protection Alternative..................2-15
Theme....................2-15
Wilderness...............2-15
Land Tenure Adjustments..2-15
Utility Corridors........2-15
Woodlands................2-18
Livestock Use, Wild Horse Use, and Wildlife Habitat Management.............2-19
The Economic Development Alternative..............2-22
Theme....................2-22
Wilderness...............2-22
Land Tenure Adjustments..2-22
Utility Corridors........2-25
Woodlands................2-26
Livestock Use, Wild Horse Use, and Wildlife Habitat Management.............2-26
The No Action Alternative....2-29
Theme....................2-29
Objective................2-29
Management Actions.......2-29
Wilderness...............2-29
Land Tenure Adjustments...................2-29
Utility Corridors........2-29
Woodland.................2-29
Livestock Use, Wild Horse Use, and Wildlife Habitat Management...................2-29
Implementation of the Resource Management Plan...2-30
Introduction.............2-30
Selective Management.....2-33
The Rangeland Monitoring Program................2-34
Standard Operating Procedures................2-35
Monitoring and Evaluation of the Resource Management Plan...................2-38
Management Actions Not Expressly Addresed by the Resource Management Plan..................2-38
Comparative Review...........2-38

Chapter 3 AFFECTED ENVIRONMENT...........................3-1
Introduction.................3-1
General Description......3-1
Resources and Uses...........3-1
Land Ownership...........3-1
Woodlands................3-2
Wildlife Habitat.........3-2
Wild Horses and Burros...3-4
Livestock Grazing........3-7
Vegetation...............3-7
Cultural Resources.......3-12
Visual Resources.........3-13
Wilderness...............3-13
Recreation...............3-20
Mineral Exploration and Development.............3-21
Energy and Utilities.....3-24
Economic Characteristics.........3-24
Social Characteristics...3-30

Chapter 4 ENVIRONMENTAL CONSEQUENCES........................4-1

Introduction..................4-1
Analysis Assumptions..........4-2
Preferred Alternative Impacts......................4-2
Resource Protection Alternative Impacts......................4-23
Economic Development Alternative Impacts......................4-40
No Action Alternative Impacts.4-57
Adverse Environmental Effects Which Cannot Be Avoided......4-65
Short-term Versus Long-term Productivity................4-66
Irreversible and Irretrievable Commitment of Resources.....4-67

Chapter 5 LIST OF PREPARERS....5-1

Chapter 6 CONSULTATION AND COORDINATION...................6-1

APPENDIX A: SUPPPLEMENT TO LIVESTOCK GRAZING..............A-1
Criteria for categorization of allotments under the selective management policy.A-1
Grazing Treatments..........A-6
Range Improvements..........A-7

APPENDIX B: BASIS FOR ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS...................... B-1

APPENDIX C: RIPARIAN HABITAT...C-1

GLOSSARY......................GL-1

BIBLIOGRAPHY..................BI-1

INDEX......................... I-1

LIST OF TABLES

TABLE NO. TITLE

S-1 Comparative Review of the Environmental Consequeneces of the Alternatives...........S-5

2-1 Livestock Grazing Allotment Statistics by Resource Conflict Area........................2-3

2-2 Key Management Actions of the Preferred Alternative by Resource Conflict Area......2-9

2-3 Key Management Actions of the Resource Protection alternative by Resource Conflict Area.. 2-16

2-4 Key Management Actions of the Economic Development Alternatives by Resource Conflict Area...............2-23

2-5 Priority of Implementation Actions by Allotment Selective Management Category.........2-33

3-1 Aquatic and Riparian Habitat Condition by Resource Conflict Area........................3-5

3-2 Wild Horse and Burro Herd Use Area Statistics by Resource Conflict Area...............3-6

3-3 Estimated Present Ecological Condition and Vegetation Trend by Resource Conflict Area........................3-10

3-4 Number of Recorded and Predicted Cultural Resources by Management Type.......................3-14

3-5 Summary of Geology, Energy, and Mineral Classification Ratings for the Simpson Park, Roberts, and Antelope Wilderness Study Areas.......................3-22

3-6 Affected Area Populations and Projections..............3-25

3-7 Total Income and Employment in 1980 for Lander and Eureka Counties.................3-25

3-8 Returns and Costs for Cattle Operations in the Shoshone-Eureka Resource Area......3-27

3-9 Current and Projected Sales of Woodland Products.........3-29

4-1 Impacts of the Preferred Alternative by Resource Conflict Area............4-3

4-2 Worst-case Estimate of the Number of Cultural Resources That Could be Affected by the Preferred Alternative.....4-14

4-3 Economic Impacts to Livestock Grazing under the Preferred Alternative (short term)..4-21

4-4 Economic impacts to livestock Grazing under the Preferred Alternative (long term)...4-22

4-5 Impacts of the Resource Protection Alternative by Resource Conflict Area....4-24

4-6 Worst-case Estimate of the Number of Cultural Resources that Could be Affected by the Protection Alternative....4-31

4-7 Economic Impacts to Livestock Grazing Under the Protection Alternative (short term)..4-38

4-8 Economic Impacts to Livestock Grazing Under the Protection Alternative (long term)...4-39

4-9 Impacts of the Economic Development Alternative by Resource Conflict Area....4-43

4-10 Worst-case Estimate of the Number of Cultural Resources That Could be Affected by the Economic Development Alternative.............4-48

4-11 Economic Impacts to Livestock Grazing Under the Economic Development Alternative (short term)...................4-54

4-12 Economic Impacts to Livestock Grazing Under the Economic Development Alternative (long term)...................4-55

4-13 Impacts of the No Action Alternative by Resource Conflict Area...........4-58

LIST OF MAPS

MAP NO. TITLE

2-1 Preferred Alternative: Wilderness Recommendations, Land Disposal, and Utility Corridors

2-2 Protection Alternative: Wilderness Recommendations, Land Disposal, and Utility Corridors.

2-3 Economic Development Alternative: Wilderness Recommendations, Land Disposal, and Utility Corridors

2-4 Resource Conflict Areas, Livestock Grazing Allotments and Wild Horse Herd Use Areas.

2-5 Comparison of Noncommercial Pine nut harvest Areas by Alternative. Pinyon-Juniper Woodlands and Noncommercial Pine Nut Areas.

3-1 Big Game Use Areas

In an earlier edition there was an errata sheet for Chapter 3. Corrections have been made in this edition.

SUMMARY

INTRODUCTION

The Battle Mountain District of the Bureau of Land Management proposes to implement a resource management plan to guide the long-term management of the Shoshone-Eureka Resource Area. Four alternatives have been prepared for analysis purposes. A preferred resource management plan and three alternatives examine different solutions to five resource management issues identified by the public and Bureau managers during May of 1981. Each of the alternatives is multiple-use oriented and differs significantly in the balance struck among resource uses.

The preferred resource management plan was originally developed as a mid-range alternative. The mid-range alternative was modified as a result of public comment obtained during November 1982 to January 1983 in response to four preliminary alternatives. The mid-range alternative was selected by management as the preferred resource management plan because of its conformance with the planning criteria listed in Chapter 1, its practical approach to resolving the planning issues, and a thorough consideration of the envionmental consequences of the alternatives.

An environmental impact statement, that analyzes the significant environmental impacts which would result if each alternative were implemented, is an integral part of this document.

PLANNING ISSUES

The following five resource management issues are addressed in the preferred resource management plan and the alternatives.

1. Which wilderness study areas or portions of wilderness study areas, if any, are suitable for recommendation to Congress for wilderness designation?

2. What land tenure adjustments are needed?

3. What areas are suitable for utility corridors?

4. What areas should be managed for woodland products such as firewood, pine nuts, Christmas trees, and fence posts?

5. How should the resource area be managed for livestock use, wild horse use, and wildlife habitat?

RESOURCE CONFLICT AREAS

In order to facilitate project level planning and impact assessment, the resource area has been divided into four resource conflict areas. Each resource conflict area has a unique set of resources that warrants specific management considerations.

ALTERNATIVES CONSIDERED

The Preferred Resource Management Plan

Through implementation of the preferred alternative, the Bureau of Land Management would seek to obtain a balance between economic uses of the public lands and environmental protection.

Under this alternative, 82,600 acres in the Antelope (NV-060-231/241) wilderness study area, 500 acres adjacent to the Antelope wilderness study area, and all 15,090 acres within the Roberts (NV-060-541) wilderness study area would be recommended for wilderness designation. All 49,676 acres within the Simpson Park wilderness study area (NV-060-428) and 4,800 acres within the Antelope wilderness study area would be recommended as nonsuitable for wilderness designation. These recommendations are preliminary and subject to change during administrative review.

A pool of 104,959 acres of public land would be identified for disposal. In addition to the pool, up to 13,440 acres of public lands, suitable for agricultural purposes within specified valleys, would be disposed of within 15 years.

Under this alternative, 112 miles of utility corridors, which include existing transmission lines, would be designated. One hundred sixty-seven miles of planning corridors would be identified. Designation and identification of corridors would form a basic east-west and north-south network.

All 600,000 acres of woodland area suitable for management would be available for public noncommercial use. Eighty-three percent of this area would also be managed for commercial harvest of firewood, juniper posts, and Christmas trees. Eighty percent of the area suitable for noncommercial public cutting would also be managed for commercial harvest of pinyon pine nuts, while the remaining twenty percent would only be available for noncommercial harvest by Nevada Indians and all other members of the public.

The preferred plan proposes to continue existing livestock, wild horse, and big game wildlife use during the short term. Vegetation monitoring data and other information collected would be used to determine what adjustments, if any, would be needed to improve the condition of the rangeland.

Rangeland improvement projects would be oriented towards increasing the amount of vegetation available for consumption in the long term while protecting sensitive resource values.

Wildlife habitat improvement projects would be oriented toward protecting and improving riparian habitat and providing suitable habitat for reasonable numbers of big game animals.

The Resource Protection Alternative

Under the resource protection alternative, the Bureau would emphasize the protection and preservation of sensitive resource values.

All three wilderness study areas (Antelope, Roberts, and Simpson Park) containing a total of 152,160 acres would be preliminarily recommended for wilderness designation.

A pool of 27,929 acres of public land would be identified for disposal. In addition to the pool, up to 13,440 acres of public land, suitable for agricultural purposes within specified valleys, would be disposed of within 15 years.

Utility corridors would be designated along 112 miles of existing transmission lines.

All 600,000 acres of woodland area suitable for management would be made available for public noncommercial use. Twenty-five percent of this area would also be managed for commercial harvest of firewood, juniper posts and Christmas trees. Eighteen percent of the area managed for noncommercial cutting would be available for commercial harvest of pinyon pine nuts and the remainder would be available to noncommercial pinyon pine nut gathering by Nevada Indians and all other members of the public.

The resource protection alternative proposes short-term downward adjustments in livestock use in order to improve the condition of the basic soil, vegetation, and watershed resources. The total livestock use adjustment would be of sufficient magnitude to provide an opportunity for big game to reach reasonable numbers and for wild horses to increase in certain areas. As part of this adjustment, livestock use in "improve" and "custodial" category livestock grazing allotments would be deferred for two months in the spring of each year to allow rest of key forage species during the critical growing season.

During the long term, additional adjustments in livestock and wild horse use, based upon the rangeland monitoring program, would be made as necessary to achieve the objectives of the alternative. Big game wildlife habitat would be managed to maintain reasonable numbers of mule deer and pronghorn antelope.

Improvement of wildlife habitat would receive more emphasis under this alternative than under the other alternatives. Protection and improvement of riparian habitat would be a major emphasis of the program.

The Economic Development Alternative

If the economic development alternative were implemented, the Bureau would emphasize the production of commodity values on the public lands within the resource area.

A portion of the Antelope wilderness study area containing 82,600 acres would be preliminarily recommended as suitable for wilderness designation. All 49,670 acres in the Simpson Park wilderness study area, all 15,090 acres in the Roberts wilderness study area, and 4,800 acres within the Antelope wilderness study area would be preliminarily recommended as nonsuitable for wilderness designation.

A pool of 236,928 acres of public land would be identified for disposal. In addition to the pool, up to 13,440 acres of land suitable for agricultural purposes within specified valleys, would be disposed of within 15 years.

Under this alternative, 112 miles of utility corridors, which include existing transmission lines, would be designated. Two hundred seventy-nine miles of planning corridors would be identified. Designation and identification of corridors would establish an intensive network of utility corridors throughout the resource area.

All 600,000 acres of woodland area suitable for management would be available for public noncommercial use. Ninety-three percent of the woodland areas available for noncommercial harvest would also be managed for commercial harvest of firewood, juniper posts, and Christmas trees. The entire acreage of manageable woodlands would be available for commercial pinyon pine nut gathering.

The economic development alternative proposes to authorize livestock at up to active grazing preference during the short term. Wild horse use would be reduced to provide more vegetation for livestock. Wildlife habitat would be managed to provide adequate vegetation for existing numbers of big game. Rangeland improvement projects would be oriented towards providing additional vegetation for livestock consumption.

During the long term, adjustments in livestock use would be made based upon the rangeland monitoring program. The bureau would continue to manage big game wildlife habitat and wild horse numbers at the levels established for the short term. A limited amount of riparian habitat would be protected and improved consistent with meeting the objective of increased livestock production of this alternative.

No Action Alternative

Under the no action alternative, present management would be continued in the Shoshone-Eureka Resource Area.

None of the wilderness study areas would be preliminarily recommended to Congress for wilderness designation.

Expressions of interest for transfer of public land to other ownership would be considered on a case-by-case basis. However, for analysis purposes, the public/private pattern of land ownership would not change from 1982.

Applications for utility transmission line rights-of-way would be considered on a case-by-case basis, but no utility corridors would be designated.

Sales of woodland products would continue at current harvest levels (last 3-year average harvest). No woodland management plans would be prepared.

Livestock use would continue to be licensed up to active preference. For analysis purposes, however, the amount of livestock use would continue at current levels (last five-year average use). The number of wild horses would be maintained at existing levels based on 1982 aerial counts. The achievement of reasonable numbers of big game wildlife would continue to be recognized as a long-term goal, but would not be expected to be reached as no new management actions, aside from completion of the Roberts Mountain habitat management plan, would be initiated.

No new livestock grazing allotment management plans, wild horse herd area management plans, or wildlife habitat management plans would be implemented. Rangeland improvement projects would be constructed to maintain present management practices, but these would not be equivalent to or contribute toward the development of allotment management plans.

Table S-1 shows the environmental consequences of each alternative in comparative form.

Table S-1 Comparative Review of the Environmental Consequences of the Alternatives by Affected Environment Component

ENVIRONMENTAL COMPONENT	MEASUREMENT PARAMETER	PREFERRED ALTERNATIVE
LAND OWNERSHIP	Acres disposed (%)[1]	58,440(1%)
WOODLANDS	Acres harvested (%)[2]	11,250(2%)
	Acres of harvest base removed	11,300(2%)(SA)[3]
	Availability of woodland products public demand would be met	Yes
WILDLIFE	Riparian habitat condition (acres)(% change)[4] projected long term	
	Poor	1,050(-15%)(SB)
	Fair	870(-4%)
	Good[5]	2,640(+11%)(SB)
	Aquatic habitat condition (miles of streams) (% change)[4] projected long term	
	Poor	44.8(-1%)
	Fair	29.2(-38%)
	Good[5]	85.0(+39%)(SB)
	Animal unit months for reasonable numbers of big game animals (mule deer and pronghorn antelope) would be available (% change)[4]	yes, in long term (+33%) (SB)
WILD HORSES	Number of animals in the short term (% change)[4]	3,660(0%)
LIVESTOCK GRAZING	Availability of forage (animal unit months)	
	current use/5-year average licensd use	239,317
	projected short term (% change)[4]	246,533(+3%)
	projected long term (% change)[4]	265,844(+11%)(SB)
VEGETATION	Long-term change[4] in ecological condition (%)	+9
	Long-term change[4] in vegetation trend (%)	+12(SB)

RESOURCE PROTECTION ALTERNATIVE	ECONOMIC DEVELOPMENT ALTERNATIVE	NO ACTION ALTERNATIVE
17,640 (0.4%)	83,940 (2%)	0
6,750 (1%)	12,750 (2%)	2,625 (0.4%)
10,800 (2%)(SA)	10,000 (2%)(SA)	0
Yes	Yes	No (SA)
690(-23%)(SB)	2,060 (+7%)	3,210 (+32%)(SA)
1,010 (+7%)	820 (+3%)	1,130 (+10%)
2,860(+16%)(SB)	1,680 (-10%)(SA)	220 (-42%)(SA)
45.1 (-1%)	95.0 (+30%)(SA)	144.9 (+61%)(SA)
26.2 (-40%)	28.8 (-38%)	11.2 (-49%)
87.7(+41%)(SB)	35.2 (+8%)	2.9 (-12%)(SA)
Yes, in short and long term (+33%)(SB)	No (SA)	No (SA)
4,300 (+17%)(SB)	1,100 (-70%)(SA)	3,660 (0%)
239,317	239,317	239,317
202,621(-15%)(SB)	279,099 (+17%)(SB)	No change
217,101 (-9%)	303,280 (+27%)(SB)	No change
+19 (SB)	+9	-15 (SA)
+16 (SB)	+11 (SB)	-14 (SA)

Table S-1 Comparative Review of the Environmental Consequences of the Alternatives by Affected Environment Component (continued)

ENVIRONMENTAL COMPONENT	MEASUREMENT PARAMETER	PREFERRED ALTERNATIVE
CULTURAL RESOURCES	Potential sites protected	1,382
	Potential sites disturbed	1,266 (SA)
WILDERNESS	Acres protected	98,190 (SB)
	Acres not protected	54,470 (SA)
RECREATION	Hunter days (% change)[4/]	
	short term	18,200 (+9%)
	long term	21,900 (+33%)(SB)
	Primitive vehicle ways closed (miles)	11.5
MINERAL EXPLORATION AND DEVELOPMENT	Acres restricted due to wilderness recommendations	98,690 (SA)
ENERGY AND UTLITIES	Bulk transfer of energy	The proposed network of corridors would satisfy all expected needs for transmission facilities during the life of the plan. (SB)

Source: Shoshone-Eureka planning team estimates

[1/] Portion of total public land (4.3 million acres) within the resource area

[2/] Portion of total woodland harvest base (600,000 acres)

[3/] SB = significant beneficial impact
SA = significant adverse impact

[4/] Percent change from existing situation

[5/] Threshold is good or better condition. Some areas included in good condition class may actually be in excellent condition.

[6/] The Simpson Park Wilderness Study Area would be recommended as suitable for wilderness designation but is not considered to be manageable as wilderness over the long term.

RESOURCE PROTECTION ALTERNATIVE	ECONOMIC DEVELOPMENT ALTERNATIVE	NO ACTION ALTERNATIVE
2,154	1,167	0
309 (SA)	1,572 (SA)	38 (SA)
152,160 (SB)6/	82,600 (SB)	0
0	69,560 (SA)	152,160 (SA)
21,900(+25%)(SB)	17,600 (+6%)	
21,900(+25%)(SB)	18,800 (+14%)(SB)	12,300 (-25%) (SA)
49	9	0
152,160 (SA)	82,600 (SA)	0
The proposed network of corridors would limit construction of new utilities to existing routes and not provide a north-south route for potential utilities.	The network of corridors proposed would provide for the establishment of utilities along all of the routes identified in the Western Regional Corridor Study. (SB)	Lack of designated corridors would hinder planning efforts of utility companies contemplating construction of major transmission utilities through Nevada. (SA)

CHAPTER 1

INTRODUCTION, PLANNING ISSUES, AND PLANNING CRITERIA

INTRODUCTION

LOCATION OF THE PLANNING AREA

The planning area contains all of the public land administered by the Bureau of Land Management within the Shoshone-Eureka Resource Area. The resource area, which is located in north-central Nevada, is an administrative subunit of the Battle Mountain District. The area includes three principal towns: Austin, Battle Mountain, and Eureka. It encompasses most of Lander and Eureka counties and a portion of Nye County.

PURPOSE OF AND NEED FOR ACTION

In contrast with the more program-oriented plans prepared by the bureau in the past, resource management plans are designed to be oriented towards planning issues. Resource management plans focus upon planning issues that represent problem areas where management effort needs to be concentrated. The intended result is that management actions take place where they are most needed in order to improve the overall effectiveness of the bureau's public land management.

Section 202 of the Federal Land Policy and Management Act of 1976 requires that the Secretary of the Interior shall, with public involvement, develop, maintain, and when appropriate revise land use plans which provide by tracts or areas for the use of the public lands. The National Environmental Policy Act of 1969 mandates that federal agencies prepare statements documenting the environmental consequences of federal actions significantly affecting the human environment. Resource management plans qualify as significant actions and thus require the preparation of an environmental impact statement.

Section 603 of the same act requires the Secretary to review roadless areas of 5,000 acres or more in size for wilderness characteristics and report to the President his recommendations as to the suitability or nonsuitability of each such area as wilderness. Three wilderness study areas are examined in the plan.

The livestock use, wild horse use, and wildlife habitat management elements have been designed to meet the requirements of the United States District Court for the District of Columbia's decision for the case of Natural Resource Defense Council Inc., et al., (plaintiffs) versus Cecil D. Andrus, et al., (defendants) of April 14, 1978. Under the terms of the court order the Bureau of Land Management must prepare environmental impact statements which discuss in detail the environmental effects of livestock grazing, and alternatives thereto, on specific areas of the public lands which are or will be authorized for such use.

This document combines the resource management plan and its environmental impact statement into one volume (43 CFR, 1601.7-3). It represents the draft environmental impact statement for the entire resource management plan and the draft for a legislative final environmental impact statement on the wilderness element of the plan.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

No areas of critical environmental concern have been identified within the Shoshone-Eureka Resource Area.

THE PLANNING PROCESS

The Shoshone-Eureka Resource Management plan is being prepared in accordance with the Bureau of Land Management's planning regulations (43 CFR 1601). The process consists of the following nine steps: 1) identification of issues; 2) development of planning criteria; 3) collection of inventory data and information; 4) analysis of the management situation; 5) formulation of alternatives; 6) estimation of effects of alternatives; 7) selection of preferred alternative (draft plan/EIS); 8) selection of the resource management (final plan/EIS), and 9) monitoring and evaluation.

PLANNING ISSUES

During 1981, representatives of the Battle Mountain District met with local governments and Indian Tribes, sought advice from the district advisory council, and conducted four workshops to gather information from the public to identify issues. A newsletter explaining the planning process, the need to identify issues, and opportunities for public involvement was issued in April of 1981.

The following issues were proposed to the public for the Shoshone-Eureka Resource Management Plan during December of 1981. They reflect concerns voiced by the public and management.

ISSUE NO. 1: WHICH WILDERNESS STUDY AREAS OR PORTIONS OF WILDERNESS STUDY AREAS, IF ANY, ARE SUITABLE FOR RECOMMENDATION TO CONGRESS FOR WILDERNESS DESIGNATION?

Through the wilderness review program, the Bureau of Land Management identified three areas requiring further study to determine if they are suitable to be recommended to Congress for wilderness designation. The values, resources, and uses of each area along with public participation will determine if each area is recommended as more suitable for wilderness designation or more suitable for other uses.

ISSUE NO. 2: WHAT LAND TENURE ADJUSTMENTS ARE NEEDED?

The Federal Land Policy and Management Act of 1976 specified that the public lands generally be retained by the government and managed for multiple use. However, there is also authority in this act for land tenure adjustments. Approximately 91 percent of the lands within the Shoshone-Eureka Resource Area are administered by the Bureau of Land Management. As the population and economy within the resource area grow, some public lands will be needed for community expansion, recreation, and public purposes, as well as for agricultural and industrial development. The need for specific land tenure adjustments will be analyzed through the resource management planning process.

ISSUE NO. 3: WHAT AREAS ARE SUITABLE FOR UTILITY CORRIDORS?

At present there are no designated utility and transportation corridors within the Shoshone-Eureka Resource Area. Corridor locations need to be identified to concentrate future major rights-of-way so that sensitive resources can be avoided. Corridor designation will also expedite the construction of new facilities.

ISSUE NO. 4: WHAT AREAS SHOULD BE MANAGED FOR WOODLAND PRODUCTS SUCH AS FIREWOOD, PINE NUTS, CHRISTMAS TREES, AND FENCE POSTS?

The public is interested in acquiring woodland products such as firewood, pine nuts, Christmas trees, and fence posts from the public lands. Increasing demand for woodland products is creating a need for long-term management plans to assure that woodland areas remain productive and capable of meeting the public´s needs.

ISSUE NO. 5: HOW SHOULD THE RESOURCE AREA BE MANAGED FOR LIVESTOCK USE, WILD HORSE USE, AND WILDLIFE HABITAT?

As steward of the public lands, the Bureau of Land Management is responsible for managing rangeland vegetation. This responsibility includes protecting the integrity and productivity of the vegetation resource while making vegetation and habitat available for livestock, wild horses, and wildlife. For a discussion of specific rangeland management considerations, please refer to the Resource Conflict Areas section of Chapter 2.

PLANNING CRITERIA

A set of guidelines or criteria was developed to direct the resource management planning process. Draft planning criteria were made available for public review in December of 1981. The general criteria apply to all of the issues, while a subsequent section displays the planning criteria developed to guide the resolution of the specific planning issues.

GENERAL PLANNING CRITERIA

Criteria to Guide the Development of the Alternatives

At least four reasonable, complete alternatives including a no action alternative will be formulated.

The alternatives will include (1) an alternative that emphasizes resource protection, (2) an alternative that proposes a mix of resource protection and development actions, (3) an alternative that emphasizes economic development, and (4) a no action alternative that represents a continuation of the current management situation.

The preferred alternative may be one of the above alternatives, or it may be developed as a separate alternative by combining portions of two or more alternatives including the no action alternative.

Each alternative will include specific management objectives and a set of management actions that would be implemented to achieve the objectives.

Each alternative will specify the resource management activity plans (allotment management plans, wildlife habitat management plans, wild horse herd management area .plans, and woodland management plans) that would be developed.

The use of the area of critical environmental concern designation will be considered as a potential management tool during the development of the alternatives.

Criteria Upon Which the Selection of the Preferred Alternative and Planning Decisions will be Based

Public comments from interested and affected publics at all levels--local, state, regional, and national --will be considered.

Public land areas will host multiple uses, except where a single use is in the public interest.

The renewable resources of the public lands will be managed on a sustained-yield basis.

The present and potential uses of the public land will be considered.

The relative scarcity of resource values and the availability of alternative sources of supply will be considered.

The relative value of long-term and short-term public benefits will be considered.

Special attention will be given to socio-economic impacts upon local communities.

The resource management plan will comply with the various state and federal environmental protection laws.

The resource management plan will be consistent with the planning and management programs of other federal agencies, state and local government and Indian tribal governments except where they conflict with the Bureau of Land Management´s legal mandate.

The impact of alternative decisions upon adjacent federal and nonfederal land will be considered. All decisions will be consistent with the laws and regulations that govern the actions of the Bureau of Land Management.

SPECIFIC PLANNING CRITERIA FOR EACH PLANNING ISSUE

Issue 1: Which Wilderness Study Areas or Portions of Wilderness Study Areas, if any, are Suitable to be Recommended to Congress for Wilderness Designation?

The preferred alternative will only recommend areas as suitable for wilderness designation where the wilderness values and the public benefits and uses that wilderness designation would provide are sufficient to offset the benefits of the resource values and uses which would be foregone due to wilderness designation.

The preferred alternative will only recommend areas as suitable if they can be managed as wilderness over the long term.

Issue 2: What Land Tenure Adjustments are Needed?

The public land will be reviewed to identify specific tracts suitable to meet community expansion, agricultural needs, recreation, and other public purposes.

In the case of lands in close proximity to population centers and significant economic and agricultural developments, priority will be given to community expansion, recreation and other public purposes.

Lands suitable for agriculture which do not have a high priority for community expansion or recreation and public purposes will be considered for disposal for agricultural purposes.

Issue 3: What Areas are Suitable for Utility Corridors?

Both point-to-point corridors and areas which should not have utility corridors because of sensitive resource values will be considered.

The utility corridor configuration proposed in the preferred alternative will be that which best meets utility and transportation development needs and which has the least impact on multiple-use management.

Issue 4: What Areas Should be Managed for Woodland Products such as Firewood, Pine Nuts, Christmas Trees and Fence Posts?

The preferred alternative will be that alternative or combination of alternatives which optimizes woodland product production without producing unacceptable adverse impacts upon other multiple-use values and uses.

Issue 5: How Should the Resource Area be Managed for Livestock Use, Wild Horse Use, and Wildlife Habitat?

Livestock Use

The appropriate level of management for each livestock grazing allotment will be determined by following a selective management approach. Following this concept, allotments will be segregated into resource management categories according to the following renewable resource, economic, and management criteria: (a) range condition, trend, and potential for improvement or deterioration in vegetation productivity, (b) resource conflicts, (c) opportunity for improvement through intensive rangeland management, (d) potential benefit from rangeland improvement projects, (e) size of allotment, and (f) cost effectiveness of implementing range improvements.

As existing range survey information is either old or incomplete, future stocking rate adjustments, if any, will normally be based upon the rangeland monitoring program. In cases where existing range monitoring data demonstrates the need for adjustments, stocking rates may be altered following the procedures contained in the grazing regulations (43 CFR, part 4100).

The maintenance of the basic soil and vegetation resources will be given a high priority.

The economic health and stability of the livestock industry will be considered.

Wild Horse Use

The preferred alternative will contain actions to maintain viable and healthy herds of wild horses.

The maintenance of the basic soil and vegetation resources will be given a high priority.

Long-term management of wild horse herds will seek to maintain their wild and free-roaming character.

Wildlife Habitat Management

The proper management of riparian habitat will be given a high priority.

Actions to protect and enhance big game, upland game, waterfowl, fish, and non-game wildlife habitat will be considered.

Habitat considered critical to federally-listed threatened or endangered animal and plant species and state-listed sensitive species will be protected.

CHAPTER 2

ALTERNATIVES

INCLUDING THE PREFERRED RESOURCE MANAGEMENT PLAN

INTRODUCTION

ALTERNATIVES CONSIDERED

Four alternatives have been prepared for analysis purposes. The alternatives include a preferred resource management plan, a resource protection alternative, an economic development alternative, and a no action alternative. The preferred resource management plan displays one way to balance resource protection and economic development needs. It is the alternative that represents the bureau´s proposed action at this time. The final resource management plan, which will be developed after publication of the final environmental impact statement, will be documented in a record of decision. The final plan may include elements from each of the four alternatives analyzed. The alternatives have been designed to span a wide range of management actions potentially available to bureau decision makers.

The preferred resource management plan was originally developed as a mid-range alternative. The mid-range alternative was modified as a result of public comment obtained from November 1982 to January 1983 in response to four preliminary alternatives. The mid-range alternative was selected by management as the preferred resource management plan because of its conformance with the planning criteria listed in Chapter 1, its practical approach to resolving the planning issues, and a thorough consideration of the environmental consequences of the alternatives.

To the best of the district´s knowledge, the proposed plan is not inconsistent with the plans of other federal agencies, local government, state government, or resident Indian tribes.

ALTERNATIVE CONSIDERED AND ELIMINATED

A no livestock grazing alternative was considered initially and then eliminated from further study. Eliminating livestock grazing on public lands within the Shoshone-Eureka Resource Area would significantly reduce annual ranch income and employment. Ranchers would have to substantially alter their operations or go out of business. As existing laws recognize livestock grazing as a valid use of the public lands, and given the impracticality of this alternative, it will not be considered further.

RESOURCE CONFLICT AREAS

In order to facilitate project-level planning and impact assessment, the resource area has been divided into four resource conflict areas. Each resource conflict area has a unique set of resources that warrants specific management prescriptions. The boundaries of each area coincide with grazing allotment boundaries, as much of the resource information available for analysis is based upon these units. Table 2-1 shows the statistical characteristics for the allotments within each resource conflict area and the results of the initial selective management categorization procedure. To properly understand Table 2-1, it is essential to understand the differences among the three selective management allotment categories: Maintain (M), Improve (I), and Custodial (C). On M category allotments the objective is to maintain current satisfactory conditions. Although range improvements are not proposed on these allotments in this plan, some minor improvements may be developed as the need arises. On I category allotments, the objective is to improve currrent unsatisfactory conditions. All range improvement projects proposed in this document are for category I allotments. On C category allotments, the objective is to manage custodially while protecting existing resource values. While range improvements are not proposed for these allotments in this plan, some minor improvements may be developed as the need arises.

The proposals made in each resource conflict area are shown in Tables 2-2, 2-3, and 2-4 by alternative. Map 2-4 shows the boundaries of the resource conflict areas. The following sections describe each of the four areas.

South Shoshone Resource Conflict Area

The South Shoshone resource conflict area includes a total of approximately 1,573,981 acres of public land. Six livestock grazing allotments within the area have initially been determined to be within the "improve" category, three allotments have been determined to be in the "maintain" category, and three allotments have been determined to be in the "custodial" category. (See the Implementation section of this chapter for an explanation of the allotment categorization process.) Five wild horse herd areas exist within the resource conflict area.

Livestock, wild horses, and wildlife all compete for a finite amount of vegetation. The present levels of utilization have resulted in areas of rangeland which are far below production potential. An estimated 70 percent of this resource conflict area is in less than good ecological condition and 25 percent of the area exhibits a declining trend (Table 3-3). Season-of-use for livestock is a major concern within this area as there is a need to break up a pattern of year-long use (professional judgement, Shoshone-Eureka range staff). Opportunities for improving the existing situation are present within the six "improve" category allotments.

The area contains 10 perennial streams totaling 49 miles on public land. Most of the riparian and aquatic habitat in the resource conflict area is in poor or fair condition (USDI, BLM, 1982). Table 3-1 shows streamside riparian and aquatic habitat condition by resource conflict area.

Table 2-1 Livestock Grazing Allotment Statistics by Resource Conflict Area

SOUTH SHOSHONE RESOURCE CONFLICT AREA

Allotment Name	Selective Management Category	Public Lands (acres)	Number of Users	Existing Level of Grazing Management	Existing Periods of Use	Class of Livestock	Active Livestock Grazing Preference (AUMs)[8/]	5 year Average Licensed Livestock Use (AUMs)	Existing Wildlife Demand (AUMs)	Reasonable Numbers Wildlife Demand (AUMs)	Existing Wild Horse Demand (AUMs)
Austin	C[10/]	238,370	6	NON-AMP[9/]	year long	CS	25,770[14/]	20,721[14]	888	1,132	3,588
Buffalo Valley	I	120,604	1	AMP	year long	C	6,588	6,454[7/]	409	580	0
Carico Lake	I[11/]	574,129	7	NON-AMP	year long	CSH[13]	36,958	27,171	1,241	1,750	5,244
Clear Creek	I	24,700	1	NON-AMP	year long	C	1,075	715	295	422	0
Fish Creek	C	116,796	2	NON-AMP	year long	CS	9,151	7,367[7/]	358	527	5,820
Gilbert Creek	I	248,724	4	NON-AMP	10/15-06/15	CS	16,964	13,656[7/]	283	426	6,432
Manhattan Mountain	C	60,980	2	NON-AMP	year long	CS	3,437	2,579	172	244	3,312
Mt. Airy	I	81,078	1	NON-AMP	year long	CS	3,772	3,787	200	307	0
O'Toole Ranches	M[12/]	29,870	1	AMP	04/15-05/31 11/01-01/15	C	1,903	1,750	74	106	0
San Juan	M	60,900	1	AMP	year long	C	3,386	4,920	244	348	0
Tierney Creek	I	6,260	1	AMP	04/15-05/31 10/15-11/25	C	478	428	14	20	0
Washington Creek	M	11,570	1	NON-AMP	04/01-02/28	C	360	288	29	42	0
Total	3M, 6I, 3C	1,573,981					109,842	89,836	4,207	5,904	24,396

NORTH SHOSHONE RESOURCE CONFLICT AREA

Allotment Name	Selective Management Category	Public Lands (acres)	Number of Users	Existing Level of Grazing Management	Existing Periods of Use	Class of Livestock	Active Livestock Grazing Preference (AUMs)	5 year Average Licensed Livestock Use (AUMs)	Existing Wildlife Demand (AUMs)	Reasonable Numbers Wildlife Demand (AUMs)	Existing Wild Horse Demand (AUMs)
Argenta	C	122,370	9	NON-AMP	year long	CSH	14,248	12,107	1,738	2,462	0
Copper Canyon	C	57,396	5	NON-AMP	year long	CSH	5,481	4,248	513	729	0
Total	2C	179,766					19,729	16,355	2,251	3,191	0

Table 2-1 Livestock Grazing Allotment Statistics by Resource Conflict Area (continued)

EUREKA RESOURCE CONFLICT AREA

Allotment Name	Selective Management Category	Public Lands (acres)	Number of Users	Existing Level of Grazing Management	Existing Periods of Use	Class of Livestock	Active Livestock Grazing Preference (AUMs)	5 year Average Licensed Livestock Use (AUMs)	Existing Wildlife Demand (AUMs)	Reasonable Numbers Wildlife Demand (AUMs)	Existing Wild Horse Demand (AUMs)
Arambel	C	45,526	2	NON-AMP	05/01-10/31	CS	2,554	2,445	1,400	1,450	1,524
Black Point	C	53,352	2	NON-AMP	05/01-10/31	CS	4,813	4,633	2,450	1,979	1,020
Corta[1/]	[2/]	1,130	1	Admin by Ely	year long	C	128	103[7/]	0	0	0
Diamond Springs	I	69,679	1	AMP	year long	C	3,680	3,179	1,433	1,158	1,020
Dry Creek	C	149,225	1	NON-AMP	year long	CH	5,701	4,220	109	510	0
Duckwater Indians[1/]	[2/]	4,013	1	Admin by Ely	Summer	C	220	177[7/]	0	0	0
Fish Creek Ranch	I	287,984	1	Interim Grazing Mgmt System	year long	C	18,914[3/]	9,320	2,441	3,199	1,980
Flynn and Parmann Individual	C	25,830	1	NON-AMP	03/01-11/30	C	1,554	1,226	582	565	0
Grass Valley	C	282,854	5	NON-AMP	year long	C	24,199	21,464	674	1,564	3,996
Hicks Station	C	24,240	1	NON-AMP	05/01-10/31	C	180[4/]	179[7/]	145	210	0
J.D.	M	97,740	1	NON-AMP	year long	CH	13,197	13,193	594	1,289	1,080
Lucky C	C	108,666	1	NON-AMP	04/20-11/15	C	5,080[6/]	1,464	570	673	1,644
North Diamond	C	81,952	3	NON-AMP	04/01-12/20	CH	4,370	4,151	436	423	0
Roberts Mountain	I	227,800	1	AMP	year long	CS	20,493	17,290	2,735	3,865	1,524
Romano	I	67,450	1	NON-AMP	year long	C	3,371	2,714[7/]	519	533	240
Ruby Hill	M	14,659	2	NON-AMP	03/16-09/30	CS	1,424	1,426	82	85	300
Santa Fe Ferguson	C	84,375	2	NON-AMP	03/01-12/01	CS	5,202	4,188[7/]	38	285	0
Seven Mile	C	88,428	1	NON-AMP	year long	CS	8,852	5,043	330	558	1,140
Shannon Sta./Spanish Gulch	C	38,873	1	NON-AMP	04/01-02/28	CS	3,167	2,848	1,391	1,135	120
Simpson Park	C	97,945	5	NON-AMP	year long	CHS	6,042	4,783	354	1,046	78
Snowball	C	27,267	1	NON-AMP	year long	C	991	991	235	340	0
Sweeny Wash	C	7,220	1	NON-AMP	Fall-Spr	C	478	477	0	56	120
Three Mile	C	26,635	1	NON-AMP	year long	C	1,301	1,001	496	401	300
Underwood	C	24,493	1	NON-AMP	year long	CS	1,462	1,177	122	403	0
Willow Race Track	M	590	1	NON-AMP	Spring-Fall	C	250	250	0	0	0
Totals	3M,4I,16C	1,937,926					137,623	107,942	17,136	21,727	16,086

Table 2-1 Livestock Grazing Allotment Statistics by Resource Conflict Area (continued)

SOUTHERN VALLEY RESOURCE CONFLICT AREA

Allotment Name	Selective Management Category	Public Lands (acres)	Number of Users	Existing Level of Grazing Management	Existing Periods of Use	Class of Livestock	Active Livestock Grazing Preference (AUMs)	5 year Average Licensed Livestock Use (AUMs)	Existing Wildlife Demand (AUMs)	Reasonable Numbers Wildlife Demand (AUMs)	Existing Wild Horse Demand (AUMs)
Kingston	C	77,530	3	NON-AMP	Fall-Spring	C	2,728[5]	2,361	490	700	30
Millet Ranch Individual	C	1,100	1	NON-AMP	Summer	C	72	72	0	0	0
Nielson Individual	C	540	1	NON-AMP	08/01-02/01	C	116	93[7]	0	0	0
Porter Canyon	C	125,150	1	NON-AMP	year long	C	7,241	5,333	493	868	1,980
Potts	C	167,600	1	NON-AMP	Fall-Spring	C	9,262	7,487	504	720	0
So. Smith Cr.	C	151,000	3	NON-AMP	year long	CH	5,331	4,291[7]	442	697	720
Trail Canyon	C	24,563	2	NON-AMP	Fall-Spring	C	581	468[7]	490	700	0
Wildcat Canyon	C	63,150	2	NON-AMP	Fall-Spring	C	2,677	2,155[7]	220	314	0
Willow Ranch	M	63,510	1	AMP	04/16-12/30	C	5,370	2,924	8	159	300
Total	1M,8C	674,143					33,378	25,184	2,647	4,158	3,030
Grand Total	7M,10I,29C	4,365,816					300,572	239,317	26,241	34,980	43,512

[1] Allotment acres and preference figures listed are for that portion of the allotment in the Shoshone-Eureka Resource Area. Allotment administered by Ely District

[2] Categorized by Ely District

[3] Includes approximately 8,900 AUMs voluntary nonuse

[4] Temporary nonrenewable AUMs

[5] Includes 832 AUMs class II grazing preference

[6] Includes approximately 3,600 AUMs voluntary nonuse

[7] One of 13 allotments that did not have data available for all 5 years. Use was set at the average adjustment from perference for the resource area

[8] Animal unit month

[9] Allotment management plan

[10] Custodial

[11] Improve

[12] Maintain

[13] Cattle, sheep, and horse

[14] Only includes portion of allotment within the Shoshone-Eureka Resource Area

Source: Shoshone-Eureka Resource Area Files

Approximately 17 miles of streams are in 2 of the "improve" category allotments.

Additional issues requiring management action include: 1) potential land tenure adjustments for community expansion near the town of Austin and for agricultural development in Antelope and upper Reese River valleys, 2) establishment and location of utility corridors for bulk transmission through the resource area, and 3) identification of woodland areas suitable to be managed for woodland products.

North Shoshone Resource Conflict Area

The North Shoshone resource conflict area includes a total of approximately 179,766 acres of public land within two livestock grazing allotments. Both of these community use allotments are in the "custodial" category. An estimated 71 percent of this resource conflict area is in less than good ecological condition and 12 percent of the area exhibits a declining trend. The area contains 11 perennial streams on public land (see Table 3-1) totaling 24 miles. The majority of the riparian and aquatic habitat is in good or fair condition (USDI, BLM, 1982). No wild horse herd areas exist within the resource conflict area. The management issues within this area include: 1) land tenure adjustments for economic development within a portion of the checkerboard ownership, and the establishment and location of utility corridors for bulk transmission through the resource area.

Eureka Resource Conflict Area

The Eureka resource conflict area includes a total of approximately 1,937,926 acres of public land. Four livestock grazing allotments within the area have been initially determined to be within the "improve" category, three allotments have been determined to be in the "maintain" category, and sixteen allotments have been determined to be in the "custodial" category. Eight wild horse herd areas exist within the resource conflict area.

Livestock and wild horses are present on many of the allotments year round. Overutilization of seasonal ranges is resulting in competition for available forage among livestock, wild horses, and wildlife. An estimated sixty-eight percent of this resource conflict area is in less than good ecological condition and two percent of the area exhibits a declining trend. Significant season-of-use and overuse problems, centered around deteriorated riparian habitat and meadow areas, have put pressure on sage grouse and other wildlife populations (professional judgement, Battle Mountain District wildlife staff). Opportunities for improving the existing situation are present within the four "improve" category allotments.

This resource conflict area has the largest amount of riparian and aquatic habitat with 17 streams totaling 64 miles on public lands. Most of these habitats are in fair or better condition (USDI,BLM, 1982) (see Table 3-1). Approximately 19 miles of streams are in one "improve" category allotment.

The Eureka area contains three wilderness study areas that total 152,160 acres. A portion of the Antelope wilderness study area is within the Tonopah Resource Area. The entire Antelope wilderness study area is included within the Eureka resource conflict area for analysis purposes. The resource management plan must make a preliminary recommendation about the suitability or nonsuitability of these areas for wilderness designation after considering all resource values and uses. Other issues within the area requiring management action include: 1) potential land tenure adjustments for community expansion near the town of Eureka and for agricultural development in Diamond Valley, 2) establishment and location of utility corridors for bulk transmission through the resource area, and 3) identification of woodland areas suitable to be managed for woodland products.

Southern Valley Resource Conflict Area

The Southern Valley resource conflict area includes a total of approximately 674,143 acres. All nine livestock grazing allotments within this resource conflict area are in the "custodial" category. This resource conflict area includes portions of three separate valleys: Smith Creek, Big Smoky, and Monitor. An estimated eighty percent of this resource conflict area is in less than good condition and eleven percent of the area exhibits a declining trend. The area contains 9 perennial streams totaling 22 miles on public land with about one-third of the riparian and aquatic habitat in poor condition and the rest in fair or better condition (USDI, BLM, 1982) (see Table 3-1). Land management issues of concern are: 1) land tenure adjustments for community expansion near Kingston and for agricultural development in Big Smoky Valley, 2) improvement of wildlife habitat in the Desatoya Mountains, 3) establishment and location of utility corridors for bulk transmission through the resource area, and (4) identification of woodland areas suitable to be managed for woodland products.

OVERVIEW OF THE ALTERNATIVES

The alternatives have been developed to include a wide range of potential management actions that could be taken in response to the five issues described in Chapter 1. Although each alternative is multiple-use oriented, the balance struck among resource uses differs significantly.

For each alternative, there is an overall theme statement that explains its intent. The theme statement is followed by specific objectives and management actions for each issue. The resource management plan is designed to be general in nature. At the next level of planning, the activity plan level, specific detailed proposals will be developed within the framework prescribed by the resource management plan. All project level proposals are based upon currently available information. These projections indicate how each alternative would actually work if implemented. Implementation of the resource management plan would take place over a period of fifteen years. Short-term actions specified under the rangeland management issue would generally take place during the first five years of plan implementation.

THE PREFERRED RESOURCE MANAGEMENT PLAN

THEME OF THE PREFERRED RESOURCE MANAGEMENT PLAN

Through implementation of the preferred alternative, the Bureau of Land Management would seek to obtain a balance between economic uses of the public lands and environmental protection. As mandated by law, the bureau would continue to protect certain resource values such as threatened or endangered species and cultural resources.

The subsequent sections describe the objectives that the bureau would pursue to resolve the management issues under this alternative. The objectives are followed by the specific management actions that would be implemented to achieve the objectives. The management actions by resource conflict area for the preferred alternative are shown on Table 2-2.

WILDERNESS

Objectives

To recommend wilderness designation for those wilderness study areas where the values of wilderness designation are capable of balancing the other resource values and uses which would be foregone due to wilderness designation.

To recommend wilderness designation only for those wilderness study areas that can be effectively managed as wilderness over the long term.

Management Actions

1) Recommend 82,600 acres of the Antelope wilderness study area, 500 acres adjacent to the Antelope wilderness study area, and all 15,090 acres of the Roberts wilderness study area suitable for wilderness designation as shown on Map 2-1.

The northern boundary of the Antelope wilderness study area currently runs along a township line. The inclusion of 500 acres contiguous with the northern boundary of the wilderness study area would enhance manageability by providing a boundary that would be recognizable on the ground.

2) Recommend all 49,670 acres within the Simpson Park wilderness study area and 4,800 acres within the Antelope wilderness study area as nonsuitable for wilderness designation as shown on Map 2-1.

The Simpson Park wilderness study area would not be recommended because of manageability and minerals considerations.

Deletion of the 4,800-acre section within the Antelope area would eliminate a large number of human imprints. These recommendations are preliminary and subject to change during administrative review.

LAND TENURE ADUSTMENTS

Objectives

To increase opportunities for economic development by moderately increasing the amount of privately-owned land within the resource area consistent with the other objectives of this alternative.

To adjust the land tenure pattern through disposals requested by private landowners consistent with the other objectives of the alternative.

Table 2-2 KEY MANAGEMENT ACTIONS OF THE PREFERRED ALTERNATIVE BY RESOURCE CONFLICT AREA

ISSUE/Action	South Shoshone RCA[1/]	North Shoshone RCA	Eureka RCA	Southern Valley RCA	Shoshone-Eureka Resource Area
WILDERNESS: Suitable (acres)	N/A	N/A	Antelope WSA[2/] (82,600); non WSA adjacent to Antelope (500); Roberts WSA (15,090)	N/A	98,190 acres (2.2% of Resource Area)
Nonsuitable (acres)	N/A	N/A	Antelope WSA (4,800); Simpson Park WSA (49,670)	N/A	54,470 acres
LANDS: Identify pool of lands for disposal	59,563 acres	13,397 acres	27,398 acres	4,601 acres	104,959 acres
Dispose of agricultural lands (not included in pool)	1,600 acres	0	6,720 acres	5,120 acres	13,440 acres
UTILITY CORRIDORS: Designate and/or identify miles of corridors	116 miles	44 miles	63 miles	56 miles	279 miles
WOODLANDS: Acres available for noncommercial harvest	120,000 acres	9,000 acres	431,000 acres	40,000 acres	600,000 acres
Acres available for commercial harvest of firewood, posts, and Christmas trees	100,000 acres	0	364,000 acres	36,000 acres	500,000 acres[4/]
Acres available for commercial pine nut harvest	80,000 acres	0	364,000 acres	36,000 acres	480,000 acres[4/]
LIVESTOCK: Licensed use as a result of short term livestock actions and actions of other resource programs	92,643	16,276	112,459	25,155	246,533
Initial level of use (5-year average licensed use)[5/] [3/]	89,836	16,355	107,942	25,184	239,317
Number of allotment management plans	3	0	2	0	5
Number of water developments	10	0	16	0	26
Miles of fence	46	0	57	0	103
Acres of vegetation manipulation	7,500	0	10,500	0	18,000
Cost of livestock improvement projects ($)	545,000	0	750,000	0	1,295,000

Table 2-2 KEY MANAGEMENT ACTIONS OF THE PREFERRED ALTERNATIVE BY RESOURCE CONFLICT AREA (continued)

ISSUE/Action	South Shoshone RCA[1/]	North Shoshone RCA	Eureka RCA	Southern Valley RCA	Shoshone-Eureka Resource Area
WILD HORSES:[3/] Level of use (1982 use for short term, then adjust as necessary)[5/]	24,396	N/A	16,086	3,030	43,512
horses	2,033		1,347	280	3,660
Number of herd management area plans	2	0	1	0	3
Number of water developments	4	N/A	2	0	6
Cost of horse habitat improvement projects ($)	10,000	N/A	5,000	0	15,000
WILDLIFE:[3/] Level of use (existing use for short term with reasonable numbers as long-term objective)					
animal unit months (short term)	4,207	2,251	17,136	2,647	26,241
animal unit months (long term)	5,904	3,191	21,727	4,158	34,980
Number of habitat management plans	1	0	3	0	4
Improve miles of streams	30	0	6	0	36
Improve acres of riparian habitat	500	0	340	0	840
Number of guzzlers installed	3	0	3	0	6
Number of spring developments	0	0	2	0	2
Acres of seedings	0	0	1,000	0	1,000
Acres of burns	0	0	1,000	0	1,000
Provision of habitat for wildlife releases	Lahontan Cutthroat trout	0	Pronghorn Antelope and Lahantan Cutthroat trout	0	Lahontan Cutthroat trout and Pronghorn Antelope
Cost of wildlife habitat improvement projects ($)	115,000	0	80,000	0	195,000

1/ resource conflict area
2/ wilderness study area
3/ use levels and project numbers for livestock, wild horses, and wildlife are values for the short term
4/ included in 600,000 acres listed above
5/ animal unit months

Management Actions

1) Identify a pool of approximately 104,959 acres of public land which meet preliminary disposal criteria. These lands are shown on Map 2-1. Disposal would meet needs for recreation or other public purposes, community expansion, economic development, agriculture, and for the creation of blocked-ownership patterns which would result in improved land management.

Livestock grazing preference would be adjusted as appropriate subsequent to actual land disposal. Table 2-2 shows the number of acres identified in the disposal pool by resource conflict area. The legal descriptions of the lands identified for disposal by alternative are available upon request from the Battle Mountain District Office.

2) Dispose of up to 13,440 acres (not included in pool under number 1) of public land suitable for agricultural purposes within 15 years in Grass, Kobeh, Antelope, Monitor, Fish Creek, Little Smoky, Big Smoky, Upper Reese River, and Smith Creek valleys.

UTILITY CORRIDORS

Objectives

To ensure a system for transmission of utilities through the resource area by establishing an east-west and north-south network of utility corridors.

To minimize adverse impacts to the environment by concentrating compatible rights-of-way in designated corridors that avoid sensitive resource values.

Management Actions

1) Designate 112 miles of utility corridors which include existing transmission lines (A-C), and identify 167 miles of planning corridors (D-G), as shown on Map 2-1:

A) O-P, a corridor southeast of Battle Mountain along Interstate 80 which would include the telephone right-of-way;

B) L-K-J-T-F or L-K-J-W-T-F, a corridor including the existing 230 Kv powerline right-of-way. From point W west to K, excluding lands administered by the Toiyabe National Forest, the existing power line right-of-way would be the southern boundary of the corridor, the corridor would not include a concentration of sage grouse strutting grounds in Township 20 North, Range 51 East and would not include Devil´s Gate;

C) J-D, a corridor including the existing 230 Kv powerline right-of-way through Big Smoky Valley. The corridor would not include lands in the Toiyabe National Forest;

D) O-R-K, a corridor for future utilities between Battle Mountain and Austin through Reese River Valley. The corridor would remain on the east side of State Highway 305, and avoid the visual resource management class II area in the lower Shoshone Mountains (Ravenswood) by remaining at least one mile east of the road;

E) M-R, a corridor for future utilities linking the geothermal area in Dixie Valley to the Battle Mountain to Austin corridor;

F) N-R, a corridor for future utilities linking the Valmy powerline to the Battle Mountain to Austin corridor; and

G) K-C, a corridor for future utilities passing through Smith Creek and Ione valleys.

Designation and identification of

these corridors would establish a basic network of north-south and east-west utility corridors through the resource area and would include all existing transmission systems. The miles of corridor proposed is summarized in Table 2-2 by resource conflict area.

WOODLANDS

Objectives

To manage suitable forested lands for optimum production of woodland products on a sustained-yield basis, while protecting sensitive values.

To maintain, where necessary for management, those access routes currently servicing pinyon-juniper harvest areas.

To set aside certain historical pinyon-juniper woodland areas for noncommercial pine nut gathering by Nevada Indians and all other members of the public.

Management Actions

1) Manage approximately 600,000 acres of pinyon-juniper woodland for noncommercial sustained-yield production of woodland products.

2) Manage approximately 500,000 acres of pinyon-juniper woodland for commercial harvest of woodland products. This acreage represents 83 percent of the area designated for noncommercial use. Table 2-2 summarizes the acres of woodland that would be available for noncommercial and commercial use by resource conflict area.

Commercial sales of firewood, juniper posts, and Christmas trees would be restricted near population centers and major access routes. Heavily-used access routes would be maintained annually if funding permits. Only selective cutting of mature and overmature trees would be allowed in firewood cutting units.

Manage approximately 480,000 acres of pinyon-juniper woodland shown on Map 2-5 for commercial harvest of pinyon pine nuts. This acreage represents 80 percent of the area designated for noncommercial use. The remaining 20 percent would be managed for noncommercial gathering by Nevada Indians and all other members of the public. Pine nuts in commercial sale units would be offered for competitive sale annually on an as-available basis.

3) Develop forest management plans for all pinyon-juniper areas capable of sustained-yield production of woodland products.

LIVESTOCK USE, WILD HORSE USE, AND WILDLIFE HABITAT MANAGEMENT

Objectives

To initially manage livestock use at existing levels and determine if such use can be maintained.

To establish a grazing management program designed to provide key forage plants with adequate rest from grazing during critical growth periods.

To achieve, through management of the livestock and wild horses, utilization levels consistent with those recommended by the 1981 Nevada Range Studies Task Group to allow more plants to complete growth cycles and to increase storage of reserves for future growth.

To increase vegetation production for all grazing animals while protecting sensitive resource values.

To manage viable herds of sound, healthy wild horses in a wild and free-roaming state.

To initially manage wild horse populations at existing numbers based on 1982 aerial counts and determine if this level of use can be maintained.

To manage wild horses within the areas which constituted their habitat at the time the Wild and Free-roaming Horse and Burro Act became law in 1971.

To maintain and improve wildlife habitat and to reduce habitat conflicts while providing for other appropriate resource uses.

To improve selected riparian and stream habitat to good or better condition.

To provide habitat sufficient to allow big game populations to achieve reasonable numbers in the long term.

To improve and maintain habitat for state-listed sensitive species and federally-listed threatened or endangered species.

Short-Term Management Actions

1) Authorize livestock use at 246,533 animal unit months. This level is 18 percent below active preference. The change would be an increase of 7,216 animal unit months above the five-year (1977-1981) average licensed use level of 239,317 animal unit months. The average five-year use in animal unit months is given in Table 2-2 for each resource conflict area.

2) Maintain wild horse use at 43,512 animal unit months, for 3,660 animals (the 1982 level) in 14 use areas. Map 2-4 shows the location of the wild horse herd use areas that would be established. Table 2-2 shows the 1982 numbers of wild horses in each resource conflict area.

3) Manage wildlife habitat initially to provide 26,241 animal unit months for existing big game animals (mule deer and pronghorn antelope). Table 2-2 gives the bureau´s estimate of existing demand for vegetation by big game in each resource conflict area.

4) Continue existing rangeland monitoring studies and establish new studies as necessary to determine what adjustments in livestock use and wild horse numbers are needed to meet the objectives of the alternative.

5) Implement allotment management plans on five allotments in the "improve" category (see the Implementation section of the chapter for an explanation of the allotment categorization process).

The projects needed to support these plans are described below and shown in Table 2-2.

Drill four wells to provide water in areas where there are no other sources of available water. The additional water would be made available to livestock, wildlife, and wild horses to encourage more even utilization of vegetation.

Develop 22 springs to promote better distribution of livestock for more even utilization of vegetation. This action would include the installation of 36 miles of pipeline and 56 water troughs.

Construct 103 miles of fence to foster better distribution of livestock for more even utilization of vegetation. This action would include installation of 17 cattle guards.

Manipulate 18,000 acres of vegetation by plowing, burning, spraying and seeding, or reseeding, to increase available forage for livestock, wild horses, and big game and improve water infiltration and holding capacity. The areas would be fenced to allow establishment of the seeded species.

6) Implement wild horse herd management area plans in the following herd use areas which include 6 "improve" category allotments: New Pass-Ravenswood, Bald Mountain, and Fish Creek.

Construct six water developments to benefit wild horses.

7) Continue implementation of the Roberts Mountain habitat management plan and develop plans for the following areas: Simpson Park, Diamond Mountains, and Mt. Callaghan. The projects needed in support of all of these and other activity plans are described below and shown in Table 2-2.

Improve and maintain at good or better condition aquatic and riparian habitat on 36 miles of streams.

Improve and maintain in good or better condition approximately 400 acres of meadows, springs, and aspen groves in wildlife habitat management plan and allotment management plan areas.

Establish and fence 1,000 acres of seeding to benefit wildlife, particularly wintering mule deer.

Conduct prescribed burns on 1,000 acres to diversify wildlife habitat and improve mule deer and sage grouse habitat.

Construct six guzzlers and two pipe lines with troughs to provide dependable water for wildlife.

Manage habitat to support release by the Nevada Department of Wildlife of approximately 200 pronghorn antelope to supplement existing low populations in the Bates Mountain area and the Rocky Hills area of the Simpson Park Range.

Manage aquatic habitat to support reintroduction of Lahontan cutthroat trout by the Nevada Department of Wildlife into streams identified as historic habitat.

Long-Term Management Actions

In the long term, the monitoring program would provide data on which to base adjustments. All adjustments would be designed to achieve the objectives of the alternative. The provision of vegetation for reasonable numbers of big game wildlife would be a priority long-term objective.

It is expected that a total of ten additional livestock grazing allotment management plans, as well as additional wild horse herd management plans, and wildlife habitat management area plans would be implemented by the end of the long term. Grazing treatments, of the type described in Appendix A, would be initiated in some allotments where monitoring data identifies a need. More on-the-ground actions such as vegetation manipulation projects, water developments, and boundary and pasture fences would be developed to meet the objectives of the alternative.

THE RESOURCE PROTECTION ALTERNATIVE

THEME OF THE RESOURCE PROTECTION ALTERNATIVE

Under the resource protection alternative, the Bureau of Land Management would emphasize the protection and preservation of sensitive resource values. As mandated by law, the Bureau would continue to protect certain resource values such as threatened or endangered species and cultural resources.

The following sections describe the objectives that the Bureau would pursue to resolve the management issues under this alternative. The objectives are followed by the specific management actions that would be implemented to achieve the objectives. The management actions by resource conflict area for the protection alternative are shown on Table 2-3.

WILDERNESS

Objective

To recommend wilderness designation for the maximum amount of wilderness study area acreage within the resource area.

Management Action

1) Recommend 152,160 acres, the entire Simpson Park, Roberts, and Antelope wilderness study areas, as suitable for wilderness designation as shown on Map 2-2.

LAND TENURE ADJUSTMENTS

Objective

To dispose of lands essential for the growth of existing population and agricultural centers consistent with the other objectives of this alternative.

To adjust the land tenure pattern through disposals requested by private land owners consistent with the other objectives of this alternative.

Management Actions

1) Identify a pool of approximately 27,929 acres of public land which meet preliminary disposal criteria. These lands are shown on Map 2-2. Disposal of land near population centers would meet needs for recreation or other public purposes, community expansion, economic development, agriculture, and for the creation of blocked-ownership patterns which would improve land management.

Livestock grazing preference would be adjusted as appropriate subsequent to actual land disposal. The legal descriptions of the lands identified for disposal by alternative are available upon request from the Battle Mountain District Office.

2) Dispose of up to 13,440 acres (not included in pool under number 1) of public land suitable for agricultural purposes within 15 years in Grass, Kobeh, Antelope, Monitor, Fish Creek, Little Smoky, Big Smoky, Upper Reese River, and Smith Creek valleys.

UTILITY CORRIDORS

Objectives

To utilize existing rights-of-way as the basis for selecting the location of utility corridors.

To minimize adverse impacts to the

Table 2-3 KEY MANAGEMENT ACTIONS OF THE PROTECTION ALTERNATIVE BY RESOURCE CONFLICT AREA

ISSUE/Action	South Shoshone RCA[1]	North Shoshone RCA	Eureka RCA	Southern Valley RCA	Shoshone-Eureka Resource Area
WILDERNESS: Suitable (acres)	N/A	N/A	Antelope WSA[2] (87,400); Roberts WSA (15,090); Simpson Park WSA (49,670)	N/A	152,160 acres (3.5 % of resource area)
Nonsuitable	N/A	N/A	0 acres	N/A	0 acres
LANDS: Identify pool of land for disposal	6,795 acres	10,780 acres	8,402 acres	1,952 acres	27,929 acres
Dispose of agricultural lands over 15 years (not included in pool)	1,600 acres	0	6,720 acres	5,120 acres	13,440 acres
UTILITY CORRIDORS: Designate miles of corridors	22 miles	0	63 miles	27 miles	112 miles
WOODLANDS: Acres available for noncommercial harvest	120,000 acres	9,000 acres	431,000 acres	40,000 acres	600,000 acres
Acres available for commercial harvest of firewood, posts, and Christmas trees	20,000	0	90,000	15,000	125,000[4]
Acres available for commercial pine nut harvest	20,000 acres	0 acres	80,000 acres	0 acres	100,000 acres[4]
LIVESTOCK:[3] Licensed use as a result of short term livestock actions[5]	75,990	11,228	91,205	24,198	202,621
Initial adjustment [6][7]	73,645	11,284	88,212	24,272	197,413
Number of allotment management plans	3	0	2	0	5
Number of water developments	6	0	13	0	19
Miles of fence	31	0	39	0	70
Acres of vegetation manipulation	5,500	0	3,500	0	9,000
Cost of livestock improvement projects ($)	345,000	0	380,000	0	725,000

Table 2-3 KEY MANAGEMENT ACTIONS OF THE PROTECTION ALTERNATIVE BY RESOURCE CONFLICT AREA (continued)

ISSUE/Action	South Shoshone RCA[1]	North Shoshone RCA	Eureka RCA	Southern Valley RCA	Shoshone-Eureka Resource Area
WILD HORSES:[3] Level of use (increase use for short term, then adjust as necessary)[5]	27,840	N/A	20,010	3,330	51,180
horses	2,320	N/A	1,675	305	4,300
percent increase	(+14)	N/A	(+24)	(+10)	(+18)
Number of herd management area plans	4	0	1	0	5
Number of water developments	6	0	2	0	8
Acres of Seeding	2,000	0	1,000	0	3,000
Cost of horse habitat improvement projects ($)	85,000	0	40,000	0	125,000
WILDLIFE:[3] Level of use (manage habitat for reasonable numbers as long-term objective)					
animal unit months (short and long term)	5,904	3,191	21,727	4,158	34,980
Number of wildlife habitat management plans	2	0	4	0	6
Improve miles of stream	40	0	24	0	64
Improve acres of riparian habitat	735	175	610	0	1,520
Number of guzzlers installed	4	0	4	0	8
Number of spring developments	0	0	2	0	2
Acres of seedings	0	0	0	0	0
Acres of burns	0	0	2,000	0	2,000
Provision of habitat for wildlife releases	Lahontan Cutthroat trout	0	Pronghorn Antelope and Lahontan Cutthroat trout	0	Lahontan Cutthroat trout and Pronghorn Antelope
Cost of wildlife habitat improvement projects ($)	155,000	0	130,000	0	285,000

1/ resource conflict area
2/ wilderness study area
3/ use levels and project numbers for livestock, wild horses, and wildlife are values for the short term
4/ included in 600,000 acres listed above
5/ animal unit months
6/ initial reduction as a result of grazing treatments implemented to provide spring rest
7/ initial reduction below 5-year average licensed use

environment by concentrating compatible rights-of-way in designated corridors that avoid sensitive resource values.

Management Actions

1) Designate the following 112 miles of utility corridors shown on Map 2-2:

A) O-P, a corridor southeast of Battle Mountain along Interstate 80 which would include the telephone right-of-way;

B) L-K-J-T-F or L-K-J-W-T-F, a corridor including the existing 230 Kv powerline right-of- way. From point W west to K, excluding lands administered by the Toiyabe National Forest, the existing power line right-of-way would be the southern boundary of the corridor, the corridor would not include a concentration of sage grouse strutting grounds in Township 20 North, Range 51 East, and would not include Devil´s Gate;

C) J-D, a corridor including the existing 230 Kv powerline right-of-way through Big Smoky Valley. The corridor would not include lands on the Toiyabe National Forest.

These utility corridors include all existing 230 Kv transmission systems in the resource area.

WOODLANDS

Objectives

To manage suitable forested lands for noncommercial production of woodland products on a sustained-yield basis, while protecting sensitive resource values.

To limit woodland product harvesting to those pinyon-juniper areas that are currently accessible.

To set aside certain historical pinyon-juniper woodland areas for noncommercial pine nut gathering by Nevada Indians and all other members of the public.

Management Actions

1) Manage approximately 600,000 acres of pinyon-juniper woodland for noncommercial sustained-yield production of woodland products. Table 2-3 summarizes the acres of woodland that would be available for noncommercial and commerical use.

Designation of harvest areas for firewood, Christmas trees, and juniper posts would be restricted to currently accessible pinyon-juniper sites. Only selective cutting of mature and overmature trees would be allowed in firewood cutting units.

2) Manage approximately 125,000 acres of pinyon-juniper woodland for commercial harvest of woodland products. This represents 25 percent of the areas designated for noncommercial use. Manage approximately 100,000 acres of pinyon-juniper woodland as shown on Map 2-5 for commercial pine nut harvest. This acreage represents 18 percent of the area designated for noncommercial use. The remaining 82 percent would be managed for noncommercial gathering by Nevada Indians and all other members of the public. Pine nuts in commercial sale units would be offered for competitive sale annually on an as-available basis.

3) Develop forest management plans for all pinyon-juniper areas capable of sustained-yield production of woodland products.

LIVESTOCK USE, WILD HORSE USE, AND WILDLIFE HABITAT MANAGEMENT

Objectives

To establish a grazing management program designed to provide key forage plants with adequate rest from grazing during critical growth periods.

To achieve, through management of the rangeland vegetation, utilization levels at or below those recommended by the 1981 Nevada Range Studies Task Group to allow more plants to complete growth cycles and to increase storage of reserves for future growth.

To manage wild horses within the areas which constituted their habitat at the time the Wild and Free-roaming Horse and Burro Act became law in 1971.

To increase the number of wild horses in existing use areas.

To maintain or improve wildlife habitat condition, to the maximum extent practicable, by eliminating or reducing conflicts with other resource uses.

To improve priority riparian and stream habitat to good or better condition and prevent decline of remaining areas.

To provide habitat sufficient to allow big game populations to achieve reasonable numbers in the short term.

To improve and maintain habitat for state-listed sensitive species and federally-listed threatened or endangered species.

To manage vegetation for livestock only after wildlife and wild horse demands are met, consistent with the conservation of the basic vegetation, soil, and water resources.

Short-Term Management Actions

1) Authorize livestock use at 202,621 animal unit months. This level is 33 percent below active preference. the change would be a decrease of 36,696 animal unit months below the five-year average use level of 239,317 animal unit months. Most of the reduction from actual use is a result of implementation of grazing treatments under number 6 below. Table 2-3 displays the livestock animal unit months that would be licensed initially in each resource conflict area.

2) Manage wild horse use at 51,180 animal unit months to accomodate 4,300 wild horses in 14 use areas. Table 2-3 shows the amount of vegetation that would be provided for wild horses in each resource conflict area.

3) Manage big game habitat to provide 34,980 animal unit months of vegetation to support reasonable numbers of mule deer and pronghorn antelope in each big game use area. Table 2-3 shows the amount of vegetation that would be provided in each resource conflict area for big game.

4) Continue existing rangeland monitoring studies and establish new studies as necessary to determine what adjustments in livestock use and wild horse numbers are needed to meet the objectives of the alternative.

5) Develop and implement allotment management plans for five "improve" category livestock grazing allotments (see Implementation section of

this chapter for an explanation of the allotment categorization process).

The projects needed to support these plans are described below and shown on Table 2-3.

Drill four wells to provide water in areas where there are no other sources of available water. The additional water would be made available to livestock, wildlife, and wild horses to encourage more even utilization of vegetation.

Develop 15 springs to promote better distribution of livestock for more even utilization of vegetation. This action would include the installation of 18 miles of pipeline and 42 water troughs.

Construct 70 miles of fence to foster better distribution of livestock for more even utilization of vegetation. This action would include installation of 11 cattle guards.

Manipulate 9,000 acres of vegetation by plowing, burning, spraying and seeding, or reseeding, to increase available forage for livestock and big game and improve water infiltration and holding capacity. The areas would be fenced to allow establishment of the seeded species.

6) Implement grazing treatments that would defer livestock grazing for two months in the spring of each year on "improve" and "custodial" category livestock grazing allotments to provide rest for key forage species during the critical spring growing season to improve ecological condition and vegetation trend.

7) Implement wild horse herd management area plans in the following herd use areas which include 6 "improve" category allotments: New Pass-Ravenswood, Bald Mountain, Fish Creek, Augusta Mountains, and Callaghan.

The projects needed in support of these plans are described below and shown in Table 2-3.

Develop 3,000 acres of seedings in herd use areas.

Construct eight water developments to benefit wild horses.

8) Continue implemention of the Roberts Mountain wildlife habitat management plan and begin implementation of plans for the following areas: Simpson Park, Diamond Mountains, Mt. Callaghan, Diamond Valley, and Shoshone Range. The projects needed in support of these plans are described below and shown in Table 2-3.

Improve and maintain at good or better condition aquatic and riparian habitat on 64 miles of streams. Improve approximately 250 acres of wetland habitat to benefit waterfowl and shore birds in northern Diamond Valley.

Improve and maintain in good or better condition 500 acres of meadows, springs, and aspen groves.

Construct eight guzzlers and develop two springs to provide dependable water for wildlife.

Manage habitat to support release by the Nevada Department of Wildlife of 200 antelope to supplement existing low populations in the Bates Mountain and Rocky Hills areas.

Manage habitat to support re-introduction of Lahontan cutthroat trout by Nevada Department of Wildlife into streams identified as historic habitat.

Conduct prescribed burns on 2,000 acres to diversify wildlife habitat and improve mule deer and sage grouse habitat.

Fence all burned areas to allow natural vegetation to become re-established. After becoming established the seeding would be grazed by livestock where consistent with wildlife habitat objectives.

Long-Term Management Actions

In the long term, the monitoring program would provide data on which to base adjustments. All adjustments would be designed to achieve the objectives of the alternative. The maintenance of vegetation for reasonable numbers of big game wildlife and improvement of the basic soil, water, and vegetation resources would take priority over livestock and wild horse use increases. Increases in livestock and wild horse use would only be forthcoming in areas where protection would be assured for wildlife habitat and the vegetation resource.

It is expected that a total of ten additional livestock grazing allotment management plans, as well as additional wild horse herd management area plans, and wildlife habitat management plans would be implemented by the end of the long term. Grazing systems, of the type described in Appendix A, would be initiated in some allotments where monitoring data identifies a need.

More on-the-ground actions such as vegetation manipulation projects, water developments, and boundary and pasture fences would be developed to meet the objectives of the alternative. Riparian and wetland areas would be monitored. Corrective action would be taken to improve these areas where necessary to stop declining trend.

THE ECONOMIC DEVELOPMENT ALTERNATIVE

THEME OF THE ECONOMIC DEVELOPMENT ALTERNATIVE

If the economic development alternative were implemented, the Bureau of Land Management would emphasize the production of commodity values on the public lands within the resource area.

Following this theme, areas would not be recommended suitable for wilderness if they appear to have significant potential for mineral development, the largest number of acres of public land would be identified as suitable for transfer to other ownership, the most miles of utility corridor would be proposed, the largest number of acres would be available for commercial harvest of woodland products, and the production of forage for livestock would be emphasized over management for wild horses and big game wildlife. As mandated by law, the bureau would continue to protect certain resource values such as threatened or endangered species and cultural resources.

The subsequent sections describe the objectives that the bureau would pursue to resolve the management issues under this alternative. The objective is followed by specific management actions that would be implemented to achieve the objectives. The management actions by resource conflict area for the economic development alternative are shown on Table 2-4.

WILDERNESS

Objective

To recommend wilderness designation for those wilderness study areas which do not have significant potential for resource development, but do have outstanding wilderness values, and can be effectively managed as wilderness over the long term.

Management Actions

1) Recommend 82,600 acres of the Antelope wilderness study area suitable for wilderness designation as shown on Map 2-3.

2) Recommend the entire Simpson Park and Roberts wilderness study areas and 4,800 acres of the Antelope wilderness study area, a total of 69,560 acres of public land, as nonsuitable for wilderness designation.

The Simpson Park wilderness study area would not be recommended because of manageability and minerals considerations. The Roberts wilderness study area would not be recommended because of minerals considerations. Deletion of the 4,800-acre section of the Antelope area would eliminate a large number of human imprints.

LAND TENURE ADJUSTMENTS

Objectives

To improve opportunities for economic development by substantially increasing the amount of privately-owned land within the resource area where consistent with the other objectives of this alternative.

To adjust the land tenure pattern through disposals requested by private land owners consistent with the other objectives of this alternative.

Table 2-4 KEY MANAGEMENT ACTIONS OF THE ECONOMIC DEVELOPMENT ALTERNATIVE BY RESOURCE CONFLICT AREA

ISSUE/Action	South Shoshone RCA[1/]	North Shoshone RCA	Eureka RCA	Southern Valley RCA	Shoshone-Eureka Resource Area
WILDERNESS: Suitable (acres)	N/A	N/A	Antelope WSA[2/] (82,600)	N/A	82,600 acres (1.9 % of resource area)
Nonsuitable (acres)	N/A	N/A	Antelope WSA (4,800); Roberts WSA (15,090); Simpson Park WSA (49,670)	N/A	69,560 acres
LANDS: Identify pool of lands for disposal	95,178 acres	92,512 acres	28,398 acres	20,840 acres	236,928 acres
Dispose of agricultural lands (not included in pool)	1,600 acres	0	6,720 acres	5,120 acres	13,440 acres
UTILITY CORRIDORS: Designate and/or identify miles of corridors	116 miles	44 miles	121 miles	110 miles	391 miles
WOODLANDS: Acres available for noncommercial harvest	120,000 acres	9,000 acres	431,000 acres	40,000 acres	600,000 acres
Acres available for commercial harvest of firewood, posts, and Christmas trees	104,000 acres	0	416,000 acres	40,000 acres	560,000 acres[4/]
Acres available for commercial pine nut harvest	100,000 acres	0	402,000 acres	38,000 acres	540,000 acres[4/]
LIVESTOCK:[3/] Licensed use as a result of short term livestock actions and actions of other resources.[5/]	113,362	15,748	122,448	27,541	279,099
Initially allow use up to active preference levels[5/]	110,062	19,729	137,403	33,378	300,572
percent increase	(+22)	(+21)	(+27)	(+33)	(+26)
Number of allotment management plans	3	0	2	0	5
Number of water developments	14	0	18	0	32
Miles of fence	61	0	77	0	138
Acres of vegetation manipulation	11,000	0	14,500	0	25,500
Cost of livestock improvement projects ($)	775,000	0	1,000,000	0	1,775,000

Table 2-4 KEY MANAGEMENT ACTIONS OF THE ECONOMIC DEVELOPMENT ALTERNATIVE BY RESOURCE CONFLICT AREA (continued)

ISSUE/Action	South Shoshone RCA[1]	North Shoshone RCA	Eureka RCA	Southern Valley RCA	Shoshone-Eureka Resource Area
WILD HORSES:[3] Level of use (decrease use)[5]	4,680	N/A	7,650	630	12,960
horses	390	N/A	645	65	1,100
percent change from existing situation	(-81)	N/A	(-52)	(-79)	(-70)
Number of herd management area plans	1	0	2	0	3
Number of water developments	2	0	1	0	3
Cost of horse habitat improvement projects ($)	5,000	0	2,500	0	7,500
WILDLIFE:[3] Level of use (manage habitat for existing numbers)					
animal unit months (short and long term)	4,207	2,251	17,136	2,647	26,241
Improve miles of streams	13	0	6	0	19
Improve acres of riparian habitat	210	0	120	0	330
Number of guzzlers installed	2	0	2	0	4
Number of spring developments	0	0	2	0	2
Provision of habitat for wildlife releases	0	0	Lahontan Cutthroat trout	0	Lahontan Cutthroat trout
Cost of wildlife habitat improvement projects ($)	55,000	0	30,000	0	85,000

1/ resource conflict area
2/ wilderness study area
3/ use levels and project numbers for livestock, wild horses, and wildlife are values for the short term
4/ included in 600,000 acres listed above
5/ animal unit months

Management Actions

1) Identify a pool of approximately 236,928 acres of public land which meet preliminary disposal criteria. These lands are shown on Map 2-3. Disposal would meet needs for recreation or other public purposes, community expansion, economic development, agriculture, and for the creation of blocked-ownership patterns which would result in improved land management.

Livestock grazing preference would be adjusted as appropriate subsequent to actual land disposal. The legal descriptions of the lands identified for disposal by alternative are available upon request from the Battle Mountain District office.

2) Dispose of up to 13,440 acres (not included in pool under number 1) of public land suitable for agricultural purposes within 15 years in Grass, Kobeh, Antelope, Monitor, Fish Creek, Little Smoky, Upper Reese River, and Smith Creek valleys.

UTILITY CORRIDORS

Objectives

To ensure a system for transmission of utilities through the resource area by establishing an intensive network of utility corridors.

To minimize adverse impacts to the environment by concentrating compatible rights-of-way in designated corridors that avoid sensitive resource values.

Management Actions

1) Designate 112 miles of utility corridors which include existing transmission lines (A-C), and identify 279 miles of planning corridors (D-L), as shown on Map 2-3:

A) O-P, a corridor southeast of Battle Mountain along Interstate 80 which would include the telephone right-of-way;

B) L-K-J-T-F or L-K-J-W-T-F, a corridor including the existing 230 Kv powerline right-of-way from point W west to K, excluding lands administered by the Toiyabe National Forest, the existing powerline right-of-way would be the southern boundary of the corridor, the corridor would not include a concentration of sage grouse strutting grounds in Township 20 North, Range 51 East, and would not include Devil´s Gate;

C) J-D, a corridor including the existing 230 Kv powerline right-of-way through Big Smoky Valley. The corridor would not include lands in the Toiyabe National Forest;

D) O-R-K, a corridor for future utilities between Battle Mountain and Austin through Reese River Valley. The corridor would remain on the east side of State Highway 305, and would avoid the visual resource management Class II area in the lower Shoshone Mountains (Ravenswood) by remaining at least one mile east of the road;

E) N-R , a corridor for future utilities linking the Valmy powerline to the Battle Mountain to Austin corridor;

F) M-R, a corridor for future utilities linking the geothermal area in Dixie Valley to the Battle Mountain to Austin corridor;

G) K-C, a corridor for future utilities passing through Smith Creek and Ione valleys;

H) B-A, a corridor over Carroll Summit paralleling State Highway 722 meeting the requirements of the visual resource management class II area in Desatoya Canyon;

I) K-G, a corridor along U.S. Highway 50 between Austin and a tie-in point in Monitor Valley;

J) H-G, a corridor for future utilities between Monitor and Big Smoky valleys;

K) G-E, a corridor for future utilities passing through Monitor Valley; and

L) T-S, a corridor for future utilities along U.S. Highway 50 between Eureka and the district boundary which would meet the requirements of the visual resource management class II area in Eureka and Pinto canyons.

These corridors would establish an intensive network of north-south and east-west utility corridors throughout the resource area. They include existing transmission systems as well as all corridors proposed in the Western Regional Corridor Study for this area.

WOODLANDS

Objectives

To manage suitable forested lands for the optimum production of woodland products on a sustained-yield basis, while protecting sensitive resource values.

To maintain, improve, or develop, where necessary for management, access routes into pinyon-juniper harvest areas.

Management Actions

1) Manage approximately 600,000 acres of pinyon-juniper woodland for noncommercial sustained-yield production of woodland products.

2) Manage approximately 560,000 acres of pinyon-juniper woodland for commercial harvest of woodland products. This acreage represents 93 percent of the area identified for noncommercial use.

Table 2-4 summarizes the acres of woodland that would be available for noncommercial and commercial use. Commercial sales would be established as demand is shown for a particular product. Chaining and commercial clearcutting would also be permitted. Heavily-traveled access routes would be identified annually for maintenance.

All public pinyon-juniper areas in the resource area would under this alternative be open to commercial pine nut harvesting. Pine nuts in commercial sale units would be offered for competitive sale annually on an as-available basis.

3) Develop forest management plans for all pinyon-juniper areas capable of sustained-yield production of woodland products.

LIVESTOCK USE, WILD HORSE USE, AND WILDLIFE HABITAT MANAGEMENT

Objectives

To establish a grazing management program designed to provide key forage plants with adequate rest from grazing during critical growth periods.

To achieve, through management of the rangeland vegetation, utilization levels at or below those recommended by the 1981 Nevada Range Studies Task Group to allow more plants to complete growth cycles and to increase storage of reserves for future growth.

To increase the amount of vegetation available for livestock use above active grazing preference, while protecting sensitive resource values.

To manage viable herds of wild horses in a wild and free-roaming state in balance with the other components of the rangeland ecosystem within the areas where they presently occur if horses were present at the time the Wild Free-Roaming Horse and Burro Act became law in 1971.

To adjust wild horse numbers in existing use areas to allow the attainment of the livestock use objectives.

To manage habitat to maintain existing numbers of big game.

To maintain crucial wildlife habitat and reduce conflicts from other resource uses.

To improve high priority riparian and stream habitat to good condition.

To improve and maintain habitat for state-listed sensitive species and federally-listed threatened and endangered species.

Management Actions

1) Authorize livestock use at 279,099 animal unit months. This level is 7 percent below active preference. The change would be an increase of 39,782 animal unit months above the five-year average licensed use level of 239,317. The active preference levels and the projected short-term licensed levels are given in Table 2-4 for each resource conflict area.

2) Manage wild horse use at 12,960 animal unit months to accomodate 1,100 wild horses in their 14 use areas. Map 2-4 shows the location of these wild horse herd use areas.

3) Manage big game habitat to provide 26,241 animal unit months of vegetation to maintain existing numbers of mule deer and pronghorn antelope in each big game use area. Table 2-4 shows the amount of forage that would be provided in each resource conflict area for existing numbers of big game animals.

4) Continue existing rangeland monitoring studies and establish new studies as necessary to determine what adjustments in livestock use are needed to meet the objectives of the alternative.

5) Develop and implement allotment management plans for five "improve" category livestock grazing allotments (see Implementation of this chapter for an explanation of the allotment categorization process).

The allotments would have plans implemented to increase the amount of vegetation available to livestock and to improve control of livestock movements. The projects needed to support these plans are described below and shown in Table 2-4.

Drill seven wells to provide water in areas where there are no other sources of available water. The additional water would be made available to livestock, wildlife, and wild horses to encourage more even utilization of vegetation.

Develop 25 springs to promote bette distribution of livestock for more even utilization of vegetation. This action would include the installation of 44 miles of pipeline and 68 water troughs.

Construct 138 miles of fence to foster better distribution of livestock for more even utilization of vegetation. Construction of these fences would include installation of 24 cattle guards.

Manipulate 25,500 acres of vegetation by plowing, burning, spraying and seeding or reseeding to increase available forage for livestock, and improve water infiltration and holding capacity. The areas would be fenced to allow establishment of the seeded species.

6) Implement wild horse herd management area plans in the following herd use areas which include six "improve" category allotments: New Pass-Ravenswood, Bald Mountain, and Fish Creek. The projects needed in support of these plans are described below and shown in Table 2-4.

Construct three water developments to benefit wild horses.

7) Continue implementation of the Roberts Mountain wildlife habitat management plan and implement a new wildlife habitat management plan in the Mount Callaghan area. The projects needed in support of these plans are described below and shown in Table 2-4:

Improve and maintain at good or better condition aquatic and riparian habitat on 19.5 miles of streams.

Improve and maintain in good or better condition approximately 100 acres of meadows, springs, and aspen groves.

Cooperate with the Nevada Department of Wildlife to re-introduce Lahantan cutthroat trout into Pete Hansen Creek.

Long-Term Management Actions

In the long term, the monitoring program would provide data on which to base adjustments. All adjustments would be designed to achieve the objectives of the alternative. Livestock use would be authorized above active preference when sufficient vegetation is available consistent with protecting the productivity of the soil, water, and vegetation resources. The amount of vegetation available for big game wildlife use and wild horses would not change from that provided during the short term.

It is expected that a total of ten additional livestock grazing allotment management plans, as well as additional wild horse herd management area plans, and wildlife habitat management plans would be implemented by the end of the long term. Grazing systems, of the type described in Appendix A, would be initiated in some allotments where monitoring data identifies a need.

More on-the-ground actions such as vegetation manipulation projects, water developments, and boundary and pasture fences would be developed to meet the objectives of the alternative.

THE NO ACTION ALTERNATIVE

THEME OF THE NO ACTION ALTERNATIVE

Under the no action alternative, present Bureau of Land Management management practices would be continued in the Shoshone-Eureka Resource Area.

The Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), which interpret the National Environmental Policy Act, (Pub. L. 91-190,42 U.S.C., 4321-4347, as amended), require that a no action alternative be included as part of each environmental impact statement. The no action alternative provides a useful benchmark by which to measure and assess the environmental consequences of the other alternatives.

OBJECTIVE OF THE NO ACTION ALTERNATIVE

To continue managing the public lands as they are managed at the present time.

MANAGEMENT ACTIONS

Wilderness

None of the wilderness study areas would be recommended to Congress for wilderness designation.

Land Tenure Adjustments

Expressions of interest for transfer of public lands to other ownership would be considered on a case-by-case basis; however, for analysis purposes, the present pattern of land ownership within the resource area would not change.

Utility Corridors

Utility rights-of-way applications would be evaluated on a case-by-case basis. The location of new utility transmission facilities and major transportation routes would not be limited to a network of planned corridors.

Woodlands

Sales of woodland products would continue at current harvest levels.

Livestock Use, Wild Horse Use, and Wildlife Habitat Management

Livestock use would continue to be authorized up to active livestock preference upon demand. The five allotments under existing allotment management plans would continue to be managed as they are at the present time. Additional unplanned and unscheduled rangeland improvement projects may be implemented to resolve site-specific problems, as necessary, to maintain existing management practices. Wild horse use would continue at existing levels based on 1982 aerial counts. Periodic gatherings of wild horses would take place to maintain 1982 numbers of wild horses. Big game wildlife use would continue at existing levels.

IMPLEMENTATION OF THE RESOURCE MANAGEMENT PLAN

INTRODUCTION

The selection of the final resource management plan will take place subsequent to a review of the public comments submitted in response to the draft plan. The final plan may consist of one of the alternatives presented in this document or it may be a combination of several of the alternatives. After publication of the final environmental impact statement, management decisions will be documented in a record of decision published in the Federal Register.

The resource management plan will be implemented through activity plans such as allotment management plans, wildlife habitat management plans, wild horse herd management area plans, and woodland area management plans. These plans will identify such details as the grazing system to be used in an allotment management plan, the location of range improvements for the benefit of livestock, wild horses and wildlife, and location of woodland product harvest areas. The management actions developed for these plans will be integrated into a total management program designed to assure progress towards meeting the objectives of the resource management plan. Additional implementation guidelines that apply to the alternatives are discussed below.

Implementation of the resource management plan will take place through coordination, consultation, and cooperation. Coordinated resource management and planning is an advisory process that brings together all interests concerned with the management of resources in a given local area (landowners, land management agencies, wildlife groups, wild horse groups, and conservation organizations) and is the recommended public process through which consultation and coordination will take place. Grazing adjustments, if required, will be based upon reliable vegetation monitoring studies, consultation and coordination, inventory, or a combination of these sources.

WILDERNESS

All wilderness study areas will continue to be protected under the Bureau´s Interim Management Policy and Guidelines for Lands Under Wilderness Review. Wilderness recommendations made in the final environmental impact statement for the resource management plan are preliminary and subject to change during administrative review. A separate final legislative environmental impact statement will be prepared for the wilderness study recommendations. A wilderness study report will also be written that addresses each area individually. After review of these documents, the Director of the Bureau of Land Management would request mineral surveys by the United States Geological Survey and Bureau of Mines for each area recommended as preliminarily suitable. The Federal Land Policy and Management Act of 1976 requires the Secretary of the Interior to review areas of the public lands determined to have wilderness characteristics, and to report to the President by October 21, 1991 his recommendations as to the suitability or nonsuitability of each such area for preservation as wilderness. The President is required to report his recommendations to Congress by October 21, 1993.

Areas designated as wilderness by

Congress will be managed under the Bureau's Wilderness Management Policy. Areas designated as wilderness will be designated "closed" to off-road vehicles under the authority of executive order numbers 11644 and 11989 and the Wilderness Act of 1964 except if such use takes place as part of a valid existing right or if authorized in the wilderness management plan for the area.

LAND TENURE ADJUSTMENTS

All land disposal actions proposed are discretionary. Actual disposal could be at the initiative of the bureau or in response to expressions of interest from non-bureau individuals and entities. Proposed land tenure adjustments will be evaluated through the environmental analysis process to determine if the action is consistent with the objectives of the plan. The decision to dispose of a particular parcel will consider conflicts identified in required cultural resource and mineral reports. Unsurveyed lands will be surveyed prior to disposal.

UTILITY CORRIDORS

Utility corridors which include existing transmission lines will be designated. Planning corridors will be identified where no transmission lines exist. Designation and identification of corridors will follow bureau procedures and will be made on a point-to-point basis within specified valleys. The actual route will be established after environmental analysis is completed for the right-of-way. Each corridor will be three miles wide to provide opportunities for multiple transmission facilities and selection of routes that minimize environmental degradation in a cost-effective manner. Where utility lines are in existence, the width of the corridor will encompass existing rights-of- way and be located to avoid sensitive resources where appropriate. Applicants for use of a corridor will be required to locate new facilities proximate to existing facilities except where considerations of construction feasibility, cost, resource protection or safety are over-riding.

WOODLANDS

Woodland management plans for the resource area will be completed within five years. The plans will define the allowable cut and management strategy to be carried out in each unit.

Harvest of trees for firewood, juniper posts, and Christmas trees will be permitted from special cutting units within designated areas. These units will be rotated from one area to another as management objectives are met. Noncommercial public harvest of pinyon pine nuts will not be restricted to specific areas.

Harvest will be restricted to slopes less than 30 percent.

LIVESTOCK USE, WILD HORSE USE, AND WILDLIFE HABITAT MANAGEMENT

Wild Horses

The management of wild horses will be coordinated through wild horse herd management area plans. Wild horses will not be maintained outside of 1971 use areas. While it is recognized that some wild horses may drift outside these areas, management will be designed to minimize such drift.

Wildlife

The development of wildlife habitat improvement projects will be guided by wildlife habitat management plans. The development of plans will be closely coordinated with the implementation of allotment management plans to meet the objectives of both programs. Wildlife habitat management plans will address four major themes: management of crucial habitats to provide for threatened, endangered, or sensitive species where present; management of big game ranges to provide habitat for reasonable numbers of animals over the long term; improvement of riparian, wetland, and aquatic habitats; and management of other habitats to meet needs of upland game and nongame animals.

Riparian and aquatic habitat improvement measures could include managing livestock through grazing systems consistent with maintaining riparian vegetation in optimum condition, pasture fencing, or fencing areas to exclude livestock and wild horses. Whether to use protective fencing, grazing systems, some other appropriate measure, or a combination of methods will be determined on an individual basis for each stream or riparian area.

Any exclosure fences will be constructed parallel to the streams and be designed to assure access to water for wildlife, wild horses, and livestock at least every one-half mile either by constructing water gaps or pipelines to troughs outside the riparian zones. In most cases when a fenced area is improved to good condition, it would be reopened to livestock and wild horse use consistent with maintaining the good condition.

Livestock

Livestock grazing allotment management plans will include one or more of the grazing treatments described in Appendix A. The grazing treatments will be designed to provide forage for consumptive use while maintaining proper and judicious use levels for key forage species.

The development of livestock grazing management procedures and projects will be coordinated through allotment management plans following the selective management policy described in the introduction section of this chapter. All projects are based upon estimated needs. The allotment management plans would determine the precise location and mixture of projects needed to meet management objectives.

Specific Implementation Procedures

A rangeland program summary will be issued within five months of the completion date of the Resource Management Plan to inform livestock grazing permittees and interested publics about the implementation of the rangeland management program.

The Rangeland Program Summary explains the procedure involved in establishing initial and subsequent levels of livestock grazing use. Grazing decisions and agreements will be issued as part of the Rangeland Program Summary and will include either initial livestock grazing use levels or will identify the data needed and the procedures to be used in determining future adjustments.

Range management actions for livestock use and wild horse numbers will be based upon data obtained through the monitoring program and will consider recommendations made through the coordinated resource management and planning process. Actions could include, but will not be limited to, change in seasons-of-use, change in livestock numbers, correction of livestock distribution problems, alteration of the number of wild horses, development of range improvements, and taking site-specific measures to achieve improvements in wildlife habitat.

The implementation strategy for the management actions identified in Table 2-5 related to livestock grazing allotments will be dependent on, and prioritized according to, the selective management category of the allotments.

SELECTIVE MANAGEMENT

It is the policy of the Bureau of Land Management to address rangeland management problems through a selective management approach. The bureau has developed three categories into which allotments will be grouped according to their resource needs and potential for improvement. The names and objectives of the three categories are: 1) maintain the current satisfactory condition; 2) improve the current unsatisfactory condition; and 3) manage in a custodial fashion.

The implementation of intensive grazing management will be accomplished through livestock grazing allotment management plans. Allotments in the "improve" category will will be given first priority for development of plans to resolve identified problems. All range improvement projects proposed in this document are for "improve" category allotments. Second priority for livestock grazing allotment management plan development will be given to "maintain" category allotments and third priority will be assigned to "custodial" category allotments. Although range improvements are not proposed on second and third priority allotments in this resource management plan, some minor rangeland improvements may be developed as the need arises.

Draft Resource Management Plan

Table 2-5 Priority of Implementation Action by Allotment Selective Management Category

Management Action	Priority by Allotment Selective Management Category		
	Maintain	Improve	Custodial
Fund rangeland improvements with appropriated funds	2	1	3
Develop allotment management plans	2	1	3
Use Supervision	3	1	2

The potential for improvement of each allotment has been determined by estimating its present range condition and analyzing its resource potential, presence of user conflicts, opportunity for positive economic return, and present management. A complete listing of the specific criteria used to evaluate the Shoshone-Eureka Resource Area´s grazing allotments appears in Appendix A.

The initial allotment categorizations shown in Table 2-1 are subject to change. Allotments may be placed into different categories in the future as allotment evaluation shows changed conditions.

THE RANGELAND MONITORING PROGRAM

An intensive rangeland monitoring system was initiated in the Shoshone-Eureka Resource Area during 1982 so that initial livestock stocking rates could be determined by 1985. The purpose of the program is to provide management with reliable data to determine if livestock, wild horse, and wildlife management actions are meeting resource management objectives. It incorporates approved methods in the 1981 Range Range Studies Task Group monitoring procedures (Range Studkies Task Group, 1981,). The vegetation monitoring system being used includes:

Utilization: BLM uses the Key Forage Plant Method--an occular estimate for judging utilization of key species by weight. In this method, the examiner divides noticeable utilization among six classes of use within a key management area; no-use (0 percent), slight (1-20 percent), light (21-40 percent), moderate (41-60 percent), heavy (61-80 percent), and severe (81-100 percent). Grazing areas would be managed for an annual utilization of 55 percent for perennial grasses and forbs and 45 percent for shrubs.

Actual Use: Livestock operators will provide records of actual livestock use. Use of the range by wild horses will be determined through census figures, with refinement made by season-of-use data as available. Actual use and season-of use by big game animals will be determined in cooperation with the Nevada Department of Wildlife.

Climatic Data: Annual precipitation and length of growing season have a marked influence on seasonal vegetation growth and production. Official weather stations and Bureau of Land Management and Nevada State climatic stations will provide the climatic data. This data will be used to correlate seasonal weather to plant growth throughout the resource area as determined in the utilization and trend studies.

Condition and Trend: Condition of a range site is determined by comparing composition by air-dry weight of the present plant association with that of the site´s climactic plant community. Trend is the direction of change in condition of the range observed over time. Changes in trend are categorized as upward, downward, or not apparent. From three to five years of observation are needed before any trend can be detected on most range sites. Trend is measured by using several methods, primarily by noting changes in the frequency of key species in key areas over time, using the Quadrat Frequency Method. Additional monitoring will be conducted in crucial wildlife and wild horse areas. Information gained through these efforts and other studies will be used in making any grazing decisions. For more detailed information on these monitoring procedures, refer to the 1981 Final Nevada Range Monitoring Procedures (Range Studies Task Group, 1981), the draft Bureau Monitoring Studies Manual (USDI, BLM) and the Nevada Wildlife Manual Supplement 6630 (USDI, BLM, Aug. 1982).

The monitoring program for those allotments in the "maintain" and "custodial" categories will be of low intensity. For the "improve" category allotments, monitoring intensity will be variable, focusing on the effects of management actions on range condition. The monitoring program will be an integral part of all the alternatives analyzed in this environmental impact statement except the no action alternative.

STANDARD OPERATING PROCEDURES

The following actions will be taken during the implementation stage of the plan to mitigate the impact of management actions.

1) All projects will require an environmental analysis prior to implementation. If through the environmental assessment it is determined that significant impacts would occur, the project will be modified, abandoned, or deferred until an environmental impact statement is completed.

2) Permanent roads will not be constructed to project sites. Use will be made of existing access, off-road travel, or temporary roads which would be rehabilitated after construction activity.

3) Cultural resource protection will require compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, Section 101(b)(4) of the National Environmental Protection Act of 1969, and the American Indian Religious Freedom Act of 1978.

Prior to project approval, intensive field inventories will be conducted at project sites. If cultural or paleontological sites are found, every effort will be made to avoid adverse impacts. However, where that is not possible, the bureau will consult with the State Historic Preservation Officer and the Advisory Council on Historic Preservation in accordance with the Programmatic Memorandum of Agreement between the bureau and the council, dated January 14, 1980.

4) All actions will be in compliance with the bureau´s visual resource management design procedures. For any project that would have a visual contrast rating in excess of the recommended maximum for the visual class zone in which it is proposed, the visual contrast will be considered significant and the need for mitigating measures will be examined.

5) Construction of all fences will conform with the objectives and specifications in Bureau Manual 1737 to assure minimization of impacts to wildlife, wild horses, recreation, and visual resources.

6) Fences in wild horse herd use areas will be located to minimize interference with the normal distribution and movement of wild horses. Selected portions of new fences constructed in these areas will be flagged or otherwise marked for one year after construction to make them more visible to horses.

7) Wild horse gathering procedures will be designed so that captured animals are handled in a safe humane manner, death loss of captured animals is limited to less than 2 percent, and roundups do not occur six weeks before and after the peak foaling season.

8) The clearing of vegetation from project sites will be restricted to the minimum amount necessary.

9) Application of herbicides, such as 2,4-D, on proposed treatment areas to reduce sagebrush and other plant species will be in accordance with procedures established in Bureau Manual 9222 to insure nonimpairment of other-than-target species.

10) All disturbed areas will be rehabilitated, where such action is necessary and practical, to replace ground cover and prevent erosion.

11) Multiple-use concepts will be considered in all vegetation manipulations where livestock, wildlife, and wild horse use areas overlap.

12) Maintenance of livestock management structures will be accomplished by livestock permittees through cooperative agreements as specified in the bureau´s 1982 Rangeland Improvement Policy (USDI, BLM, Oct. 1982).

13) Long-term air quality will be protected as all bureau and bureau-authorized activities must be designed to prevent air quality deterioration in excess of the established thresholds specified in the Nevada Ambient Air Quality Standards.

14) A "threatened" or "endangered" species clearance may be required before any part of the plan is implemented that would affect a threatened or endangered species or its habitat. If any part of the plan would impact a threatened or endangered species or its habitat, the impacts of the project will be "mitigated" or the project abandoned if appropriate measures are not feasible.

15) Water will be made available in allotments and rested pastures for wild horses and wildlife, wherever feasible.

16) Spring improvement projects will be fenced and water will be piped away from the source to a trough or pond if necessary. Water will also be left at the spring source where appropriate.

17) Where the need is identified for wildlife use, water improvements could include bird ramps in watering troughs, lateral water sites off pipelines, overflows at troughs, protected seep areas, and fences around spring developments.

18) Alteration of sagebrush areas either through application of herbicides, prescribed burning, or by mechanical means will be in accordance with procedures specified in the Western State´s Sage Grouse Guidelines (Western States Sage Grouse Committee, 1974) and the Memorandum of Understanding between the Nevada Department of Wildlife and Bureau of Land Management. All vegetation treatment projects will be coordinated with the Nevada Department of Wildlife at least one year in advance of implementation.

19) Livestock grazing and wild horse use, where practical, will be deferred for at least two growing seasons

on all vegetation manipulation projects, including prescribed burns, to allow vegetation to be reestablished.

20) Each wilderness study area will be managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review to preserve its wilderness characteristics until Congress officially designates it as wilderness and includes it in the National Wilderness Preservation System, or it is officially removed from further wilderness consideration. After designation as wilderness by Congress, each wilderness area will be managed in conformance with the Bureau of Land Management Wilderness Management policy.

21) Mineral resource survey reports will be prepared by the U.S. Geological Survey and the Bureau of Mines on all areas with a preliminary recommendation as suitable for wilderness designation. The mineral resources survey will become part of the information used by the Secretary of the Interior in making the final recommendations on wilderness suitability.

22) Woodland products will be harvested or removed in accordance with sound forestry and conservation practices. Consideration will be given to the protection of scenic, recreational, watershed, and other values.

23) Cutting and removal of woodland products will be accomplished in such a manner as to leave the residual stand in a condition for continued production except where the objective is to clear a woodland area for increased benefit to other resource values.

24) All woodland product harvest permits and contracts will include a stipulation to prohibit the cutting of rare or unique trees and vegetation. In particular, cutting of aspen, cottonwood, limber pine and bristlecone pine will be prohibited.

(25) Lands will not leave federal ownership if the required mineral report concludes that the mineral potential of the land is of greater than nominal value.

26) Lands not identified as suitable for disposal will be retained in public ownership.

27) All lands not specifically designated closed or limited to off-road vehicles will be designated open to such use. This action will be carried out in conformance with Executive Orders 11644 and 11989.

28) Rights-of-way for public access will be reserved prior to disposal of lands.

29) None of the lands identified as suitable for disposal will be transferred to other ownership if the cultural resources survey shows that they contain sites determined to be eligible for inclusion in the National Register of Historic Places (USDI, NPS, 1979).

30) Livestock permits will be adjusted if necessary to reflect decreases in public land acreage available for livestock grazing use within an allotment as a result of land disposal.

MONITORING AND EVALUATION OF THE RESOURCE MANAGEMENT PLAN

The resource management plan will be evaluated at five-year intervals to determine if there is sufficient cause to warrant revision or amendment. The evaluation will consist of a review of rthe issues, objectives, and management actions. The review will determine if these components are meeting the needs of management and define necessary changes as appropriate.

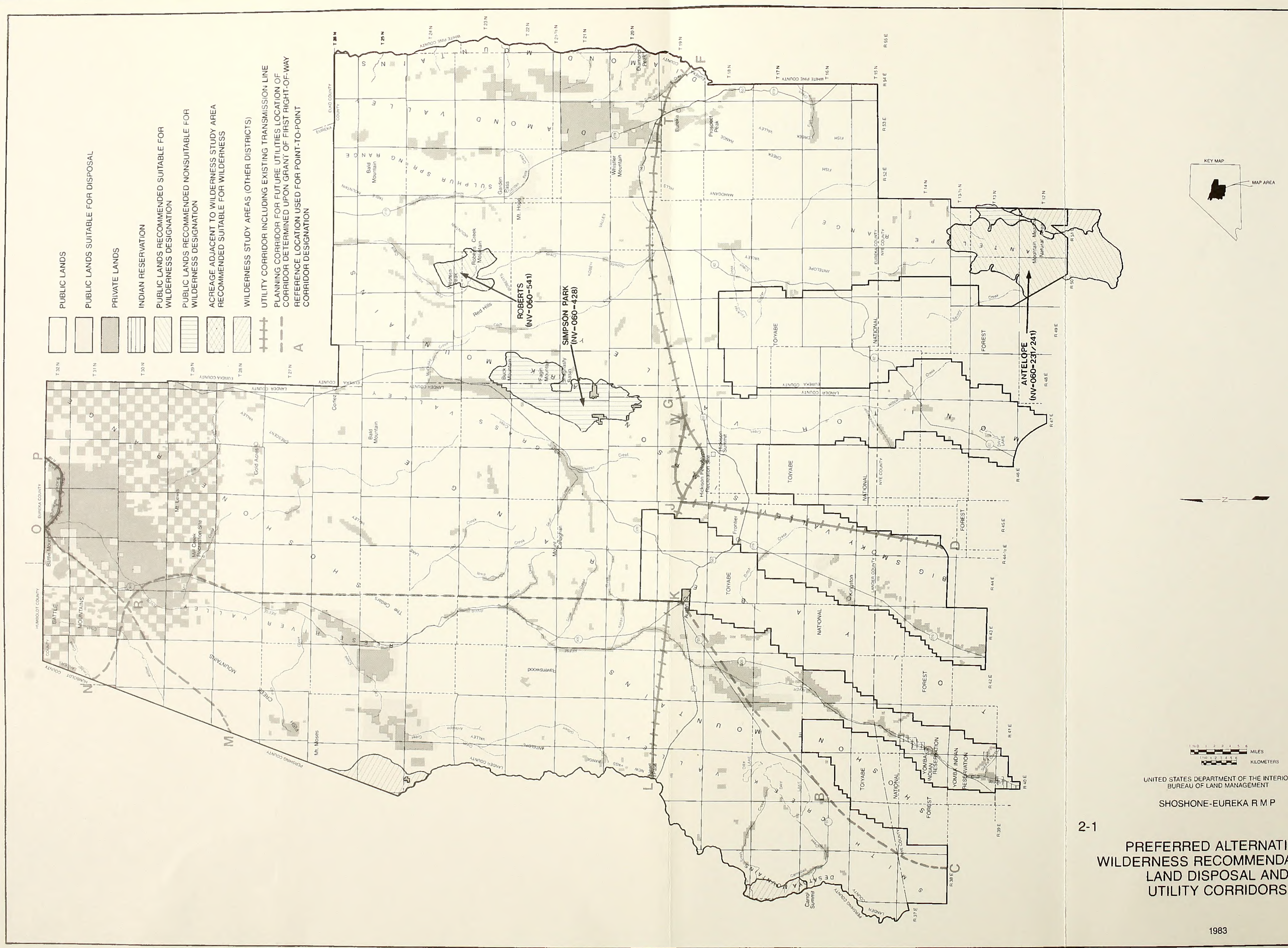
MANAGEMENT ACTIONS NOT EXPRESSLY ADDRESSED BY THE RESOURCE MANAGEMENT PLAN

The resource management plan is limited in scope to five significant issues. It is not intended to provide guidance for the management of all potential resource values and uses. Resource uses or management actions not mentioned in this plan shall be clearly consistent with the terms, conditions, and decisions of the approved plan.

Past management decisions unaltered by this plan remain in effect until expressly changed utiliing standard bureau decision procedures.

COMPARATIVE REVIEW

The comparative review Table S-1 summarizes in tabular form the environmental consequences of each alternative.


PUBLIC LANDS
PUBLIC LANDS SUITABLE FOR DISPOSAL
PRIVATE LANDS
INDIAN RESERVATION
PUBLIC LANDS RECOMMENDED SUITABLE FOR WILDERNESS DESIGNATION
PUBLIC LANDS RECOMMENDED NONSUITABLE FOR WILDERNESS DESIGNATION
ACREAGE ADJACENT TO WILDERNESS STUDY AREA RECOMMENDED SUITABLE FOR WILDERNESS
WILDERNESS STUDY AREAS (OTHER DISTRICTS)
UTILITY CORRIDOR INCLUDING EXISTING TRANSMISSION LINE
PLANNING CORRIDOR FOR FUTURE UTILITIES LOCATION OF CORRIDOR DETERMINED UPON GRANT OF FIRST RIGHT-OF-WAY
A REFERENCE LOCATION USED FOR POINT-TO-POINT CORRIDOR DESIGNATION
ROBERTS (NV-060-541)
SIMPSON PARK (NV-060-428)
ANTELOPE (NV-060-231/241)
Roberts Creek Mountain
Bald Mountain
Garden Pass
Mt. Hope
Whistler Mountain
Diamond Peak
Eureka
Prospect Peak
Red Hills
Hickison Petroglyph Recreation Site
Hickison Summit
Austin
Mt. Callaghan
Gold Acres
Cortez
Mt. Lewis
Battle Mountain
Mill Creek Recreation Site
Ravenswood
Mt. Moses
Carroll Summit
Kingston
TOIYABE NATIONAL FOREST
YOMBA INDIAN RESERVATION
EUREKA COUNTY
LANDER COUNTY
NYE COUNTY
ELKO COUNTY
WHITE PINE COUNTY
HUMBOLDT COUNTY
PERSHING COUNTY
KEY MAP
MAP AREA
N
MILES
KILOMETERS

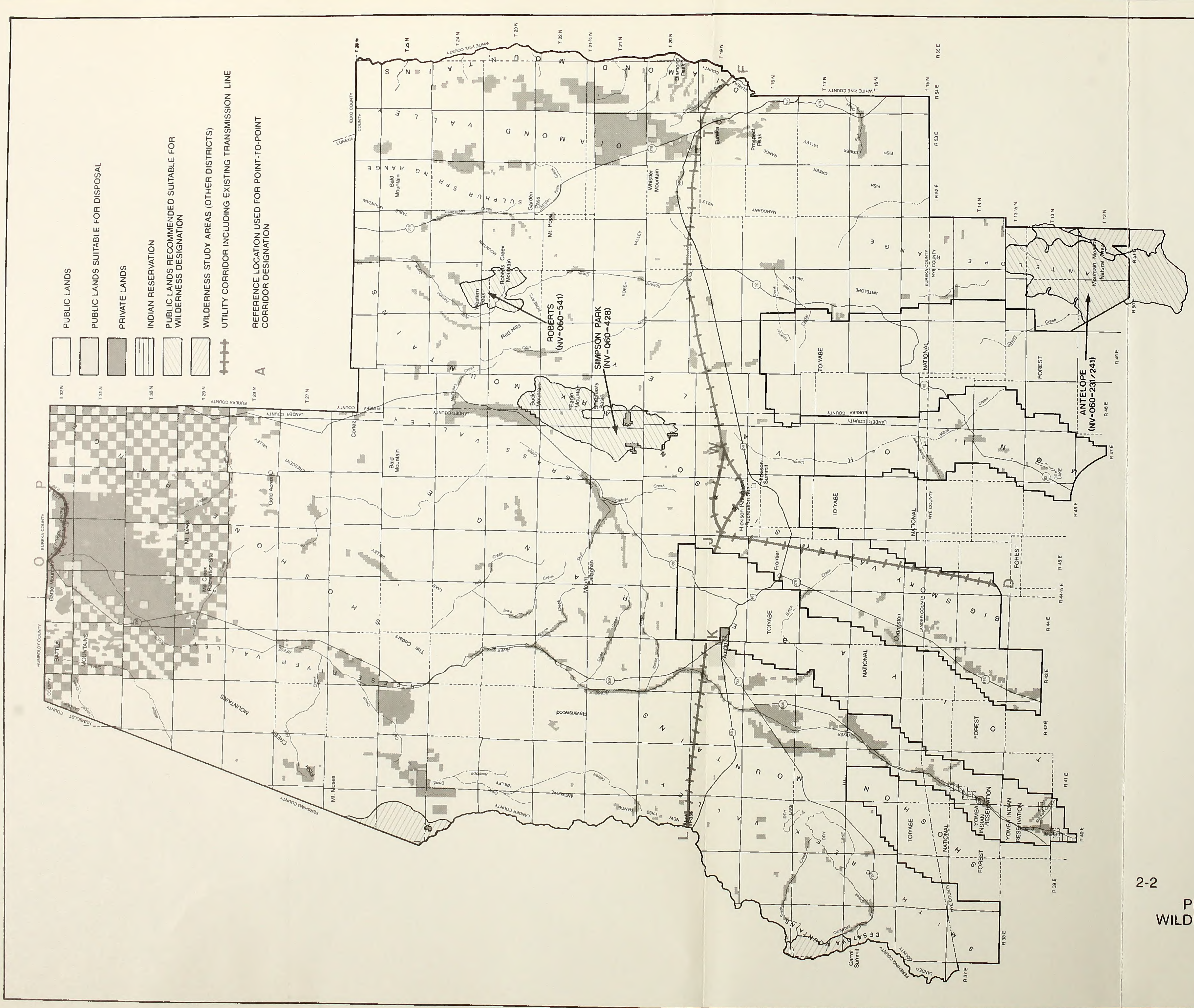
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHOSHONE-EUREKA R M P

2-1

PREFERRED ALTERNATIVE:
WILDERNESS RECOMMENDATIONS,
LAND DISPOSAL AND
UTILITY CORRIDORS

1983



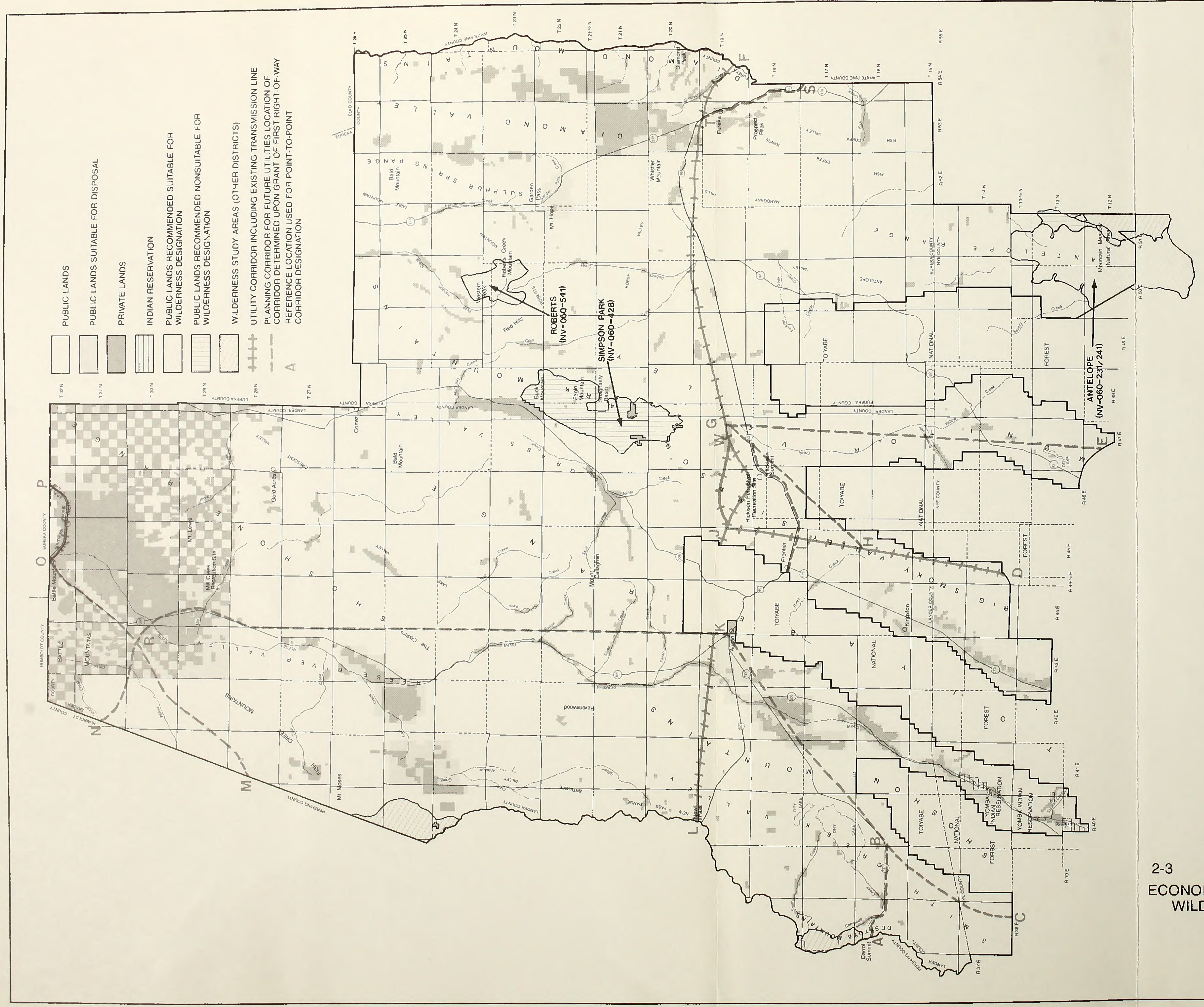
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHOSHONE-EUREKA R M P

2-2

PROTECTION ALTERNATIVE: WILDERNESS RECOMMENDATIONS, LAND DISPOSAL AND UTILITY CORRIDORS

1983



PUBLIC LANDS
PUBLIC LANDS SUITABLE FOR DISPOSAL
PRIVATE LANDS
INDIAN RESERVATION
PUBLIC LANDS RECOMMENDED SUITABLE FOR WILDERNESS DESIGNATION
PUBLIC LANDS RECOMMENDED NONSUITABLE FOR WILDERNESS DESIGNATION
WILDERNESS STUDY AREAS (OTHER DISTRICTS)
UTILITY CORRIDOR INCLUDING EXISTING TRANSMISSION LINE
PLANNING CORRIDOR FOR FUTURE UTILITIES LOCATION OF CORRIDOR DETERMINED UPON GRANT OF FIRST RIGHT-OF-WAY
A REFERENCE LOCATION USED FOR POINT-TO-POINT CORRIDOR DESIGNATION
ROBERTS (NV-060-541)
SIMPSON PARK (NV-060-428)
ANTELOPE (NV-060-231/241)
TOIYABE NATIONAL FOREST
YOMBA INDIAN RESERVATION
KEY MAP
MAP AREA
N

MILES

KILOMETERS

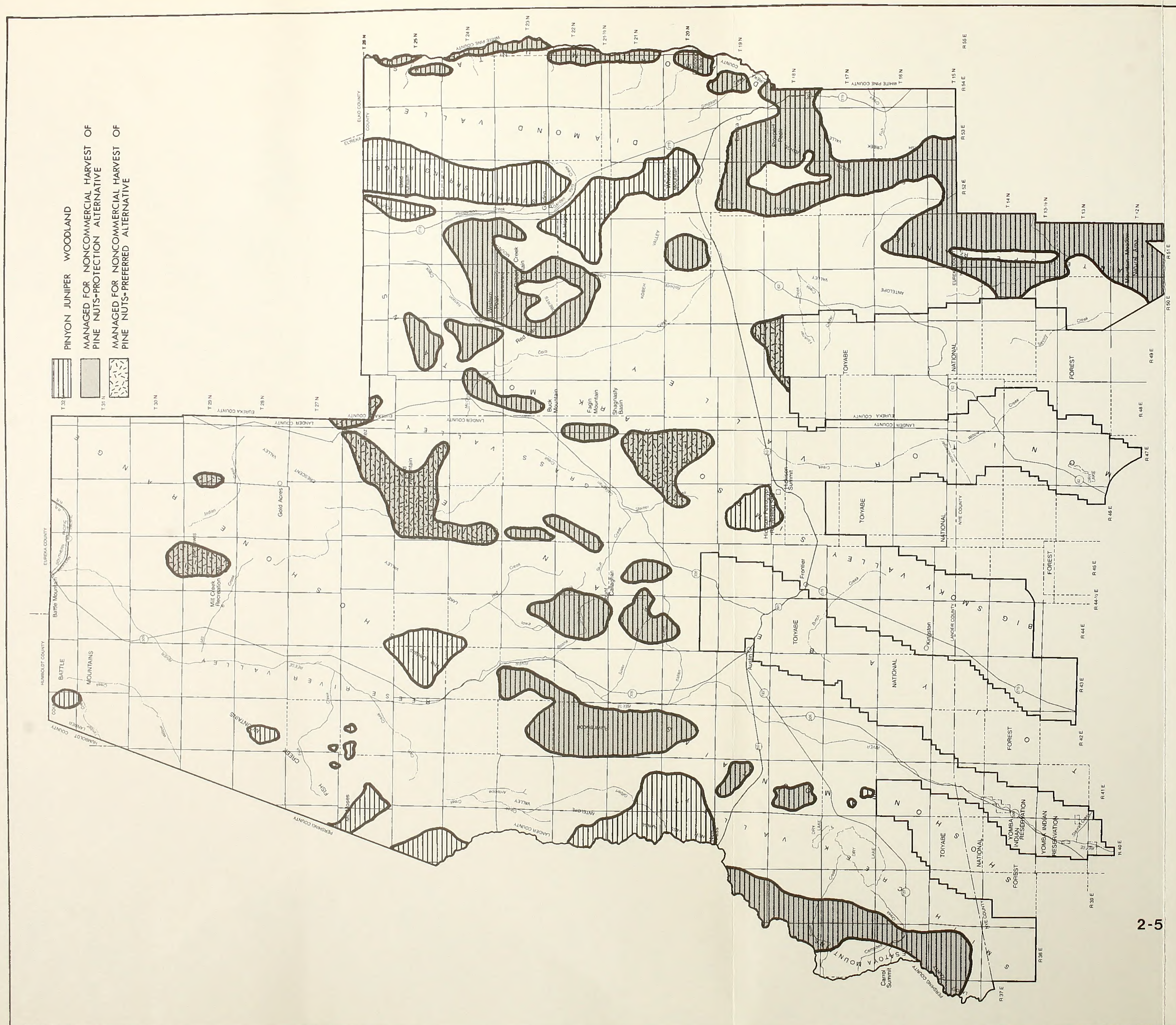
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHOSHONE-EUREKA R M P

2-3

ECONOMIC DEVELOPMENT ALTERNATIVE: WILDERNESS RECOMMENDATIONS, LAND DISPOSAL AND UTILITY CORRIDORS

1983



MILES
KILOMETERS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHOSHONE-EUREKA R M P

2-5

PINYON JUNIPER WOODLANDS AND NONCOMMERCIAL PINE NUT AREAS

1983

CHAPTER 3

AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the specific resources and uses of the Shoshone-Eureka Resource Area which could be impacted by the proposed plan or the alternatives. Sixteen resources and uses have been identified.

The resources and uses discussed include:

Land ownership
Woodlands
Wildlife habitat
Wild horses and burros
Livestock grazing
Vegetation
Cultural resources
Visual resources
Wilderness
Recreation
Mineral exploration and development
Energy and utilities
Economic and social characteristics

GENERAL DESCRIPTION

The Shoshone-Eureka Resource Area is located in north-central Nevada and includes the towns of Battle Mountain, Austin, and Eureka. Most of Lander and Eureka counties and a small part of northern Nye County are in the resource area. Major transportation routes within the resource area include Interstate Highway 80, which dips into the resource area near Battle Mountain; U.S. Highway 50, which runs east-west through the southern third of the resource area connecting Austin and Eureka; and State Route 305, which runs north-south connecting Battle Mountain with Austin. In 1980, the population of the resource area was about 5,000 people.

The Shoshone-Eureka Resource Area is generally typical of the basin and range province in Nevada. It is characterized by fault block mountain ranges, most of which run in a north-south direction, separated by large valleys. Elevations range from 4,518 feet near the town of Battle Mountain to 10,187 feet at the top of Mt. Callaghan in the Toiyabe Range. Most valleys average 5,000 feet in elevation while the mountain ranges average 7,500 to 8,200 feet (USDI, BLM, August, 1971 and January, 1973).

RESOURCES AND USES

LAND OWNERSHIP

The boundary of the resource area encloses a total area of about 5.7 million acres of which approximately 4.3 million acres are public lands administered by the Bureau of Land Management, 1.0 million acres are managed by the U.S. Forest Service in the Toiyabe National Forest, and 0.4 million acres are privately-owned.

With the exception of lands in the northern part of the Shoshone-Eureka Resource Area which have alternating sections of public and private lands, the lands in the resource area are large blocks of public land with private lands in a few concentrated areas. There are parcels of public land in close proximity to all population centers which have the potential for satisfying demand for residential, commercial, recreation, or public purposes needs. In agricultural areas in middle Reese River Valley, upper Reese River Valley, Big Smoky Valley, and Diamond Valley, there are parcels of agricultural public lands which are bordered on one to four sides by private lands. Because of their isolation, location, or size, many of these parcels are difficult to manage for multiple use by the Bureau of Land Management.

WOODLANDS

There are nearly 600,000 acres of pinyon-juniper woodland classified as forest available for woodland products management in the resource area. Of this, less than 20 percent or 120,000 acres is currently accessible for woodland harvest. Demand for woodland products has been steadily increasing over the last decade. Current annual demand is for approximately 500 cords of firewood, 3,300 Christmas trees, 5,300 juniper posts, and 52,500 pounds of pine nuts.

WILDLIFE HABITAT

A variety of wildlife habitats corresponding generally to vegetation types occurs throughout the resource area. The wildlife species found in these habitats vary in abundance and diversity depending on the type and condition of the vegetation community. Approximately 300 species of wildlife are seasonal or year-long residents of the resource area.

Mule Deer

Mule deer is the primary big game animal in the resource area. Although numbers are generally down based on long-term population trends, they have been increasing in recent years (Hess, 1981). This increase has been attributed to good fawn production, mild winters allowing good over-winter survival and a hunter quota system implemented in 1975 (Tsukamoto, 1979, Hess, 1982). The 1982 mule deer summer population is estimated at approximately 8,000 animals, with almost two-thirds of that number occurring in the east half of the resource area (Barngrover, Pers. com. 1982).

There are approximately 1.2 million acres of mule deer habitat in the resource area. Studies to determine habitat condition in each use area have not yet been established. However, it is estimated that habitat condition is generally poor to fair in the west half of the resource area and fair in the east half (Professional Judgement, District Wildlife Staff) (Hess, 1981; Hess, 1982). Summer ranges occur at the higher elevations above 7,500 feet in most of the mountain ranges. Year-long and winter ranges occur at the middle and lower elevations. In the western half of the resource area, deer seasonal movements are generally elevational on the same mountain range with little movement between mountain ranges. On the east half of the area, the situation is reversed with many deer moving south in the fall and winter and north again in the summer. In severe winters some deer, particularly in the Diamond Mountains and Roberts Mountains, move as far south as Morey Bench in the Hot Creek Range in Nye County. Map 3-1 shows deer use areas and migration routes in the resource area.

Antelope

Antelope populations in the resource area are quite low. Approximately 80-100 animals are scattered in five different locations: Smith Creek Valley, Bates Mountain, Antelope Valley, Rocky Hills, and Little Smoky Valley. Those animals in the Rocky Hills area and Little Smoky Valley are in the resource area only part of the year.

Sage Grouse

Sage grouse occur in varying numbers throughout most of the resource area. The greatest concentrations are in the north end of the Shoshone Range, the Mount Callaghan area, the Simpson Park Range and Roberts Mountain. The most crucial habitats for sage grouse are the breeding complexes which include strutting grounds, nest sites (usually within two miles of a strutting ground), and upland meadows which provide succulent forage for young and adults from mid-summer to early fall (Call, 1979).

As noted in the riparian portion of the Vegetation Section, much of the meadow habitat in the resource area has been severely damaged resulting in loss of vegetation and lowered water tables. This in turn, has brought about deterioration of crucial sage grouse habitat.

There are 134 known strutting grounds scattered throughout the resource area on the valley benches and mountain foothills. The greatest concentrations of strutting grounds occur in Kobeh, Grass, and Carico Lake valleys. The use of strutting grounds generally varies from year to year depending on the size of the sage grouse population.

Riparian Habitat

Wetland-riparian areas represent approximately 0.1 percent of the Shoshone-Eureka Resource Area. However, many wildlife species either depend on these areas or use them more than any other habitat type. Thomas, et al,(1979) state that for any given number of acres of habitat, this type supports a higher population diversity and density than any other type. During a wildlife habitat inventory conducted in 1980 in the resource area, 106 of the 129 species observed in the field were associated with wetland or riparian habitat (USDI, BLM, 1981).

Much of the wetland-riparian vegetation in the resource area is in less than good condition. Riparian habitat condition by resource conflict area is shown in Table 3-1. A number of wildlife habitat conflicts exist in these deteriorated areas and were documented during the inventories (USDI, BLM, 1981). A primary habitat conflict is the trampling of water sources, particularily cold springs and small wet meadows, by livestock and wild horses. Trampling also reduces the quality and quantity of both water and vegetation by creating a hummock effect on the soil and destroying vegetation. The continued decline of these wildlife habitats is detrimental to many wildlife species.

The reduction of cover in and around riparian areas is also a significant habitat conflict. Overutilization of forage, or management practices that do not incorporate objectives to improve or stabilize riparian areas, severely reduce the cover and forage available to wildlife, decrease the quality of fisheries habitat and result in a decline in streambank stability and increased erosion. This severely reduces the cover and forage available to wildlife.

Aquatic Habitat and Fisheries

There are 159 miles of perennial streams on public lands in the resource area. The aquatic habitat condition of these streams is shown for each resource conflict area in Table 3-1.

Trout occur in a number of streams, most notably those on Roberts Mountain, Shoshone Mountains, Mount Callaghan, and upper Reese River Valley. The most commmon species are rainbow, brown and brook trout.

Threatened and Endangered Species

The Lahontan cutthroat trout, a federally-listed threatened species occurs on bureau-administered lands in the upper Reese River. About 90 percent of the Humboldt River drainage, including the Reese River system, has been identified as probable historic Lahontan cutthroat trout habitat by the Nevada Department of Wildlife. Several streams flowing into the Reese River Valley have been identified as potential sites for Lahontan cutthroat trout reintroductions (Coffin, 1982). Aquatic habitat condition, as measured by Bureau of Land Management stream surveys, on these streams is, in almost all cases, poor or fair (USDI, BLM, 1982).

Bald eagles, a federally-listed endangered species, are occasionally seen on the resource area, however no winter concentrations or roost sites are known to exist.

WILD HORSES AND BURROS

Wild Horses

Approximately 3,660 wild horses are distributed among 14 herd use areas scattered throughout the resource area (see Map 2-4). The herd areas encompass all or part of 22 grazing allotments. Table 3-2 shows the number of horses by use area (based on 1982 aerial surveys), the size of each area, and the specific allotments or portions thereof covered by each area. Herd use areas have been established based upon past historical horse use and inventory data gathered from 1972 to 1982.

Some herd use areas extend outside the resource area boundaries. The Augusta Mountains herd use area includes a portion in the Winnemucca District, and the Desatoya herd use area includes that portion of the Desatoya Mountains in the Carson City District. Population counts on these two areas include the entire herd use areas. Horses in the North Monitor and Seven Mile herd use areas also use adjacent National Forest lands part of the year. Therefore, populations in these two areas vary depending on where horses were when the survey was conducted.

Burros are confined to one use area near Hickison Summit. About 20 burros spend part of the year on the resource area and the remainder on nearby National Forest land.

Wild horses in the resource area are generally healthy and reasonably adapted to their environment. However, during periods of drought or prolonged and severe winters,

Table 3-1 Aquatic and Riparian Habitat Condition by Resource Conflict Area

Resource Conflict Area	Excellent	Good	Fair	Poor	Total
Aquatic (miles)					
North Shoshone	0	5.0	15.0	4.0	24.0
South Shoshone	0	1.5	19.5	27.6	48.6
Eureka	0	16.4	39.6	8.0	64.0
Southern Valley	0	0	15.3	7.1	22.4
	0	22.9	89.4	46.7	159.0
Riparian (acres1/)					
North Shoshone	0	210	80	80	370
South Shoshone	20	50	120	600	790
Eureka	290	1,320	430	910	2,950
Southern Valley	30	220	70	130	450
	340	1,800	700	1,720	4,560

1/ Acreage figures are estimated since the wildlife habitat inventory was not done by resource conflict area.

Source: USDI, BLM, 1982

Table 3-2 Wild Horse and Burro Herd Use Area Statistics by Resource Conflict Area

Resource Conflict Area	Herd Use Area	Size (Acres within RCA[1]	1982 Numbers	AUM[2] Demand	Allotment
South Shoshone	Augusta Mtns	198,000	485	5,820	Fish Creek
	Bald Mountain	120,000	362	4,344	Carico Lake
	Callaghan	76,500	289	3,468	Austin
	New Pass - Ravenswood	225,000	812	9,744	Gilbert Creek Manhattan Mtn.
	South Shoshone	180,000	85	1,020	Carico Lake Austin
Total			2,033	24,396	
Eureka	Callaghan	76,500	288	3,456	Grass Valley
	Diamond	122,000	205	2,460	Diamond Springs Black Point Shannon Station
	Fish Creek	275,000	446	5,352	Fish Creek Ranch Arambel Lucky C
	Hickison Burros	54,000	13	78[5]	Simpson Park
	Roberts Mountain	132,000	127	1,524	Roberts Mountain
	Rocky Hills	124,000	135	1,620	J.D. Grass Valley
	Seven Mile	180,000	105	1,260	Seven Mile Swenny Wash
	Whistler Mountain	60,000	28	336	Romano Lucky C
Total			1,347	16,086	
Southern Valley	Desatoyas	107,000	225	2,700	Porter Canyon S. Smith Creek
	Hickison Burros	22,000	5	30[5]	Kingston
	North Monitor	35,000	50	300[5]	Willow Ranch
Total			280	3,030	
Grand Total			3,660	43,512	

Source: Shoshone-Eureka Resource Area Fiiles

1/ resource conflict area
2/ animal unit month
3/ 1978 count
4/ 1980 count
5/ animals are on the resource area 6 months out of the year

animals in some herd use areas do show signs of stress. Major problems which may be faced by wild horse herds in the future include competition with livestock for food and water , construction of fences that inhibit movement to areas of forage or water, and conflicts with humans.

LIVESTOCK GRAZING

Sixty-four livestock permittees are licensed to graze livestock in 48 allotments within the Shoshone-Eureka Resource Area. The primary class of livestock is cattle, although substantial sheep use is made both in trailing through the area and on seasonal ranges within the area. Domestic horses are licensed in a few allotments.

As discussed in the Vegetation Section of this chapter (see the Vegetation Section following this section), past utilization problems and improper season-of-use has led to vegetation composition changes less productive for livestock grazing. Vegetation production decreases with a decline in density, cover and vigor. The amount of the decrease varies greatly with site potential. The last five-year average use, which is 20 percent below active preference partially reflects the decreased productivity of the rangeland.

Grazing is authorized essentially year-long, although a few allotments have only seasonal use. Cattle generally use the valley bottoms and fans at turnout and eventually work to the tops of the mountain ranges where they stay until fall. During winter, cattle are confined to the valleys and bench lands. This pattern of use can vary depending on the availability of water, the steepness of slope, weather, and forage supply and distribution. Sheep generally use the valley bottoms and fans during the winter and move to the higher reaches of their authorized allotments for the summer months. For a statistical summary of the characteristics of the livestock grazing allotments, by resource conflict area, refer to Table 2-1.

VEGETATION

At the present time, no known threatened or endangered plant species are found within the resource area. Eight plant species which occur in the resource area were listed in the Federal Register, December 15, 1980, as species being reviewed for listing as endangered or threatened species. Should any of these species be proposed for listing or actually listed they would be managed according to the Endangered Species Act, as amended, and Standard Operating Procedure number 14.

The vegetation communities found in the Shoshone-Eureka Resource Area are typical of those found in the Great Basin region. The extremes of climate, elevation, and soil type combine to produce environments that strongly influence the plant species. Vegetation varies from salt-tolerant shrubs and grasses which inhabit the valley bottoms to pinyon-juniper, mountain mahogany, and limber pine in the highest mountain ranges. The vegetation in the resource area can be broken down in a general way by elevation (USDI, BLM, August, 1971).

Valley Bottoms (4,500 - 5,000 feet)
Greasewood Type

In the valley bottoms, the vegetation ranges from pure stands of greasewood to mixtures of greasewood, shadscale, rabbitbrush, sagebrush, and winterfat. The understory, where present, consists of giant wild rye, alkali sacaton, squirrel-tail, cheatgrass, pepperweed, halogeton, Russian thistle, and wild mustard.

Benches and Fans (5,000 - 5,300 feet) Shadscale Type

On benches and fans, the vegetation consists primarily of shadscale, sagebrush, rabbitbrush, and hopsage. The understory is mainly squirreltail, Indian ricegrass, galleta grass, cheatgrass, wild mustard, halogeton, and primrose.

Foothills and Mountains (5,000 - 10,000 feet) Sagebrush Type

In these areas, the vegetation consists of sagebrush with scattered pinyon pine and juniper and with interspersed perennial grass types. The shrub cover consists of big sage, black sage, rabbitbrush, service berry, snowberry, and mountain mahogany. The understory consists of Sandberg bluegrass, bluebunch wheatgrass, giant wild rye, Idaho fescue, and cheatgrass.

Foothills and Mountains (6,000 - 8,000 feet) Pinyon-Juniper Type

On the mid-level foothills and mountains, the vegetation consists of pinyon pine and juniper interspersed with the sagebrush type in localized areas. It varies from nearly pure stands of pinyon-juniper to stands mixed with big sage and rabbitbrush. Sandberg bluegrass, needle and thread grass, and cheatgrass are the most common grasses found in the understory.

Riparian (all elevations)

Riparian vegetation is associated with or near surface water and may be found along stream banks and canyon bottoms or around springs and wet meadows. Plant species include wild chokecherry, cottonwood, and aspen. Stands of "snowbank aspen" are also included in this type.

Mountain Meadows (over 8,000 feet)

In these areas, the vegetation consists of stands of perennial grasses, sedges and rushes.

High Mountain (8,000 - over 10,000 feet) Mountain Mahogany-Limber Pine Type

At the highest elevations, the vegetation ranges from pure stands of mountain mahogany to mixtures of mountain mahogany, limber pine, bristlecone pine and rocky mountain juniper. There is little understory vegetation at the upper elevations as shallow soils are replaced by bedrock.

Ecological Condition and Trend

Ecological condition and vegetation trend data documenting the decline in site condition is not available at this time for the resource area. Vegetation studies implemented during the 1982 and 1983 grazing seasons, along with additional studies to be implemented as part of the Shoshone-Eureka resource area monitoring plan, will be used to guide livestock and wild horse adjustments and to make habitat assessment recommendations to Nevada Department of Wildlife harvest programs. The estimates of ecological condition and vegetation trend used in this document were based on the professional judgement of the Shoshone-Eureka Resource Area Staff.

Estimated current ecological range condition and vegetation trend for the Shoshone-Eureka Resource Area are shown by resource conflict area on Table 3-3.

Ecological condition is the present state of a vegetation site in relation to the natural potential (climax) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble those of the climax plant community for the site.

Although the climax plant community is the natural terminus of the successional process, it may not be the most desirable, given the objectives of the proposed alternative. In some cases it may be preferrable to manage for a condition (seral stage) somewhere below climax with a percent plant composition which is better suited for the proposed use.

Ecological condition must not be confused with "livestock forage condition". Livestock forage condition is a measure of the ability of the vegetation to provide a "sustained yield" of high quality forage for different kinds of livestock and wild horses and burros.

While ecological condition is the current state of health of the range, trend is the direction in which condition is moving: upward trend indicates an improving range condition, downward trend indicates a deteriorating range condition, and a stable trend indicates no discernible change in condition.

The following cited references explain the process leading to the current unacceptable condition of most vegetation communities as they relate to successional climax in the Shoshone-Eureka resource area.

With the advent of European settlement, plant communities changed radically. Man brought in new species of both plants and animals which resulted in reduced populations of native fauna. Plant populations changed under the reduced native animal impact and the increased grazing pressure of domestic animals. Those plants that were most palatable to domestic livestock declined in vigor and abundance and became minor elements in the plant community. Less palatable plants increased. Entire plant communities changed their composition and brush and woody plants increased on many rangelands. Climax plants ultimately may disappear as a result of vegetation retrogression induced by grazing. They leave first from the most accessible and, hence, most grazed areas, and soon are evident only under the protection of stout shrubs. Later, even these disappear, often leaving nothing but annual invaders (Stoddart, et. al, 1975). The retrogression of climax bunchgrass communities to annuals was further expressed by Kormondy (1969) when he indicated that bluebunch wheatgrass has been lost on many sites to cheatgrass since man brought livestock to the United States from Europe.

Holmgren and Hutchings (1972) also indicated the effects of improper grazing on salt desert shrub communities when they concluded that on pastures grazed heavily in late winter, shadscale had become dominant while the two most valuable shrub species (budsage and winterfat) had declined. Laycock (1970) reported the effects of heavy spring grazing that damaged good condition ranges by reducing herbaceous production by more than 50 percent and increasing sagebrush production by 78 percent. Tueller (1973) reported that Clements (1949) made reference to sagebrush disclimax as an exten-

Table 3-3 Estimated Present Ecological Condition and Vegetation Trend by Resource Conflict Area

		Ecological Condition								Vegetation Trend					
Resource Conflict Area	Total Acres	Poor Acres	%	Fair Acres	%	Good Acres	%	Excellent Acres	%	Downward Acres	%	Stable Acres	%	Upward	%
North Shoshone	179,766	6,118	(3)	122,588	(68)	51,060	(29)	0	(0)	21,225	(12)	158,541	(88)	0	(0)
South Shoshone	1,573,981	79,743	(5)	1,021,345	(65)	472,893	(30)	0	(0)	394,140	(25)	1,179,841	(75)	0	(0)
Eureka	1,937,926	75,339	(4)	1,241,316	(64)	550,076	(28)	71,195	(4)	31,889	(2)	1,600,088	(82)	305,949	(16)
Southern Valley	674,143	15,950	(2)	525,393	(78)	120,098	(18)	12,702	(2)	17,619	(3)	594,926	(88)	61,598	(9)
Resource Area	4,365,816	177,150	(4)	2,910,642	(67)	1,194,127	(27)	83,897	(2)	464,873	(11)	3,533,396	(81)	367,547	(8)

Source: Based upon professional judgement of Shoshone-Eureka Resoruce Area range staff.
All numbers are approximate.

sive vegetation formation of the Great Basin in which big sagebrush has achieved post-climax dominance, a position maintained by continuous overgrazing of the formerly dominant bunchgrasses.

Riparian Vegetation Condition

There are 4,560 acres of riparian vegetation in the resource area, representing approximately 0.1 percent of the total public land acreage. Though small in area, this vegetation type is heavily used by wildlife, livestock, and wild horses. The condition of riparian vegetation in the resource area was determined from wildlife habitat inventories conducted in 1979 and 1980.

Riparian vegetation condition varies throughout the area. Table 3-1 shows riparian habitat condition by resource conflict area. Streamside riparian habitat was evaluated during stream surveys conducted in 1979. Streamside riparian habitat was based on four parameters: bank cover, bank stability, and ungulate damage rating and stream width/depth ratio. (See Appendix C for a detailed explanation of how riparian condition was determined). The condition of non-streamside riparian areas, including seeps, springs, and wet meadows, was evaluated based on apparent damage from grazing animals or other causes. Of 292 areas sampled, 192 (66 percent) showed significant damage (USDI, BLM, 1982). The types of damage documented were usually the result of overutilization of areas by livestock and wild horses, including trampled and polluted water sources and wet meadows, and lack of regeneration of aspen, cottonwood, or other tree species. Some areas were also damaged by mining activity, road construction, and spring development or pipeline installation. In general, the North Shoshone and South Shoshone resource conflict areas had more areas damaged than the Eureka and Southern Valley resource conflict areas.

Season of Use

An understanding of the growth cycles of forage species is important to the goal of maintaining a sustained yield and to the development of sound grazing management systems. Varying the season of livestock grazing use and allowing for periodic rest can improve vigor and production while maintaining the same level of use.

In the Shoshone-Eureka Resource Area, lack of adequate sources of spring forage contributes to the decrease in available forage and decline in ecologicial condition. Native ranges have been repeatedly grazed during the critical growth period reducing both the quality and quantity of forage and cover. The critical growth period for most of the perennial grass species in the resource area is approximately early May through mid-July with growth beginning generally by early April. This early growth uses carbohydrate root reserves stored the previous year during the critical growth period. By mid-July, an ungrazed plant replenishes its root reserves although it will not complete its life cycle through the seed ripe stage until early August. If the plant is unable to replenish its root reserves because of moisture condition or grazing during the critical growth period, it will progress into winter dormancy with a deficit in its energy reserve. If this cycle is repeated year after year this energy deficit increases until the plant can no longer maintain itself and dies. In periods of drought even vigorous plants with adequate energy reserves are under severe stress. Plants going into a drought period with a severely depleted energy supply will be unable to survive.

The critical growth period for cold desert shrub species, primarily winterfat, is during its active growth period which may begin as early as March 1 and continue as late as October 31. Winterfat has an extremely high tolerance to winter grazing. As much as 75 percent of the foliage may be used during the winter dormant period with little effect on plant vigor; anything more than light grazing during active growth periods results in reduced plant vigor. Even light grazing during the summer may preclude seed production. Spring and summer grazing use would have to be discontinued in order to improve and maintain winterfat range.

CULTURAL RESOURCES

Cultural resources are the remains of past (both prehistoric and historic) and present human activities. They are non-renewable, generally fragile, and consist of sites or locations where humans lived or conducted some activity. Sites may consist of or contain artifacts (tools or other products of human manufacturing or use); food remains such as animal bones and charred plant remains; buildings and communities; environmental data such as evidence of past climate and plant communities; and sacred location objects, plants or animals (things important to living peoples´ traditions and/or religions).

Central Nevada has been inhabited by humans for at least 12,000 years. The earliest sites recorded thus far represent a time when pluvial lakes contained water and human adaptation was based on the resources provided by these lakes. Archaeologists call this adaptation the "Western Pluvial Lakes Tradition". As the lakes dried up subsistance strategies changed to a reliance on a much broader spectrum of resources. This adaptation, the "Desert Archaic", with its several variants continued into the historic period. The historic period represents Euroamerican settlement of central Nevada and the development of mining and ranching.

For management purposes, however, a different classification of sites based mainly on physical type is more useful because physical attributes better determine management options than age of the site. Thus in the Shoshone-Eureka Resource Area the cultural resources are divided into the following three management types: prehistoric--open, rock shelter or cave, and rock art; historic--Euro- american (or other immigrant group) and aboriginal; isolated finds-- single artifacts, prehistoric or historic. Sacred sites, which are generally geographic areas, represent an additional management type. However, there are currently no recorded sacred sites in the Shoshone-Eureka Resource Area. Table 3-4 lists the number of each of these management types recorded during project-specific or Class I and II surveys.

Recorded impacts to cultural resources have included vandalism, development, and livestock and wild horse trampling. Vandalism includes illegal artifact collection, excavation and "salvage" of historic structures. Developments such as highways, powerlines, and fences have had varying degrees of impacts. Impacts due to livestock and wild horse trampling have been severe in some areas of heavy use.

The inventory level in the resource area is currently insufficient to predict with any degree of confidence the total cultural resources universe. Only 0.73 percent of the area has been surveyed at a Class III level. When Class II, or extensive acreage is added, only 1.41 percent of the area has been surveyed. However, crude predictions can be made. These are included in Table 3-4.

VISUAL RESOURCES

Visual Resource Management Classes set limits to the amount of contrast which will be allowed in an area between a management activity (road, powerline, fence, etc.) and the existing landscape. All areas in the Shoshone-Eureka Resource Area fall into Class IV, III, or II. Class IV is the least restrictive of the three classes. A management activity in this class could draw attention as a dominant feature in the landscape, but attempts should be made to minimize the contrast by repeating the form, line, color, and texture of the characteristic landscape. Most of the resource area has been designated as Class IV.

In a Class III area, a management activity is expected to be evident, but does not draw attention to itself as a dominant feature in the landscape. The following areas have been designated as Class III: Cortez Canyon, the east and west sides of Garden Valley, Road Canyon, Trout Creek, the Hickison Summit Campground area, portions of the Simpson Park Range, portions of the Shoshone Range, upper Reese River Valley, portions of the Antelope Range, portions of Big Smoky Valley, and a small area north of the town of Eureka.

In a Class II area, a management activity may be visible, but must not attract attention as a contrast to the landscape. The following areas have been designated as Class II: the Roberts wilderness study area, the east side of the Ravenswood portion of the Shoshone Range, Devil´s Gate, and Pinto Canyon.

WILDERNESS

Three wilderness study areas are being studied by the Shoshone-Eureka Resource Area. These are Roberts (NV-060-541), Simpson Park (NV-060-428), and Antelope (NV-060-231/241). All three of these areas are within the Eureka resource conflict area except for a portion of the Antelope area which is in the Tonopah Resource Area. Small portions of several other wilderness study areas extend into the resource area from adjacent districts. These include NV-030-108 (Sonoma-Gerlach Management Framework Plan Amendment, Winnemucca District), NV-030-110 (Lahontan Resource Management Plan, Carson City Ditrict), and NV-040-154 (Egan Resource Management Plan, Ely District).

More information about each wilderness study area is included in the wilderness study technical report for the Shoshone-Eureka Wilderness Study (USDI, BLM, 1983). The technical report contains the wilderness study area specific analyses required by the Bureau´s wilderness study policy. A description of each of the three wilderness study areas follows.

According to the Bailey-Kuchler system of ecosystem classification (Bailey, 1976), the Antelope and Roberts wilderness study areas lie within the Pinyon-Juniper Woodland Ecosystem. The Simpson Park area lies within the Great Basin Sagebrush Ecosystem.

Table 3-4 Number of Recorded and Predicted Cultural Resources by Management Type

Site Type	Number of Sites Recorded Class I and II Surveys (60,510 acres)	Number of Sites Predicted in Resource Area (4,365,816 acres)
Prehistoric		
Open	539	38,227
Rock Shelter	4	284
Rock Art	1	71
Historic		
Euroamerican	58	4,113
Aboriginal	1	71
Isolated find	253	17,943
Totals	856	60,709

Source: Battle Mountain District Cultural Reports

The Pinyon-Juniper Woodland Ecosystem is currently not represented in the National Wilderness Preservation System. There are presently 14 areas totaling 535,000 acres which represent this ecosystem that are administratively endorsed for wilderness designation. Many of the other wilderness study areas administerd by the Bureau of Land Management within Nevada fit within this ecosystem.

The Great Basin Sagebrush Ecosystem is currently represented in the National Wilderness Preservation Stystem by one area in California which totals 62,695 acres. There are eight areas totaling 783,510 acres which represent this ecosystem that are administratively endorsed for wilderness designation. Many of the other wilderness study areas administered by the Bureau of Land Management within Nevada fit within this ecosystem.

None of the areas considered in this study are within five-hours driving time of a major population center. Five hours is considered to be a day´s driving time.

Opportunities for solitude and primitive recreation near major population centers would not be preserved as a result of wilderness designation of these wilderness study areas.

The Jarbidge Wilderness Area in northeastern Nevada is the only wilderness area in the state. The Draft Tonopah Wilderness Environmental Impact Statement identified 234,080 acres within six areas as preliminarily suitable for wilderness designation. Two of these areas are immediately south of the Antelope wilderness study area. The Schell Resource Area Draft Wilderness Environmental Impact Statement identified 188,707 acres within 7 areas as preliminarily suitable for wilderness designation. These areas are within the Ely District which is east of the Shoshone-Eureka Resource Area.

Antelope Wilderness Study Area

NV-060-231/241

The Antelope Wilderness Study Area is located in the Antelope Range and contains approximately 87,400 acres of public land (approximately 2 percent of the resource area). It is oval shaped, approximately twenty-five miles long and eight miles wide with an average elevation differential of about two thousand feet. The size of the area contributes significantly to the diversity of landform, vegetation types, and wilderness characteristics within the unit.

The area is generally free from human imprints and is in a natural state. The following imprints are substantially unnoticeable in the wilderness area as a whole: thirteen ways, four water developments, a small seeding in the northeast portion of the unit near Crested Wheat Ridge, five fences which protrude a short way into the unit, and a small exclosure in the southeast portion of the unit. All imprints are the result of livestock grazing operations and firewood cutting.

The potential does exist for changing the wilderness area boundary to omit a number of these imprints near Crested Wheat Ridge. Two fences, a seeding, three ways, and five cherry-stemmed roads are included in a 4,800-acre area that could be removed by adjusting a short section of boundary line.

The Antelope wilderness study area is in a very remote section of Nevada. Naturalness and opportunities for solitude are affected very little by outside sights and sounds. There are seven cherry-stemmed roads and other roads that follow the boundary around most of the unit, but these are, for the most part, unnoticeable from within the unit. Traffic on these roads is very light, and associated mainly with livestock grazing. These roads neither enhance nor diminish the quality of wilderness characteristics within the unit.

The unit contains outstanding opportunities for solitude. Located twenty miles from the nearest paved highway, the area is extremely remote and seldom visited. A mixture of diverse topography and vegetation combine to form excellent screening in the unit. In addition, size and topography combine to form almost unlimited secluded spots. The interior of the unit provides very limited motorized access ensuring seclusion to almost any degree sought.

The area offers abundant opportunities for sustained high-elevation hiking and horseback riding, hunting, sightseeing, photography, and historical and archaeological study. These factors, in combination, offer outstanding opportunities for primitive and unconfined recreation within the wilderness study area.

Untrampled spring meadows, uncommon in Nevada, occur in the southern portion of the unit. A group of Shoshone Indian wickiups, the James Wild Horse Trap (a nominee for the National Register of Historic Places), and many scattered archaeological sites exist in the unit. Being relatively undisturbed, these special features enhance the suitability of the area for wilderness designation.

The Antelope wilderness study area is considered to be manageable as wilderness over the long term. There are no private inholdings, state lands, mining claims or leases within the unit. No rights-of-way are proposed within or near the area. Livestock grazing is the only presently-known valid existing use within the Antelope wilderness study area. For the most part, boundaries are easily recognizable and offer no problems for wilderness management. An exception is a 2.5 mile long portion of the northern boundary which follows a township line. Manageability could be improved by moving the boundary north to coincide with terrain features identifiable on the ground. This boundary revision would encompass an additional 500 acres. Another adjustment would be the deletion of the 4,800 acre area previously mentioned. Deletion of this area would improve manageability by removing imprints of man, including ways and cherry-stemmed roads, where vehicle use would be a manageability problem. Additional ways are not considered a major problem for manageability.

The Roberts Wilderness Study Area

NV-060-541

The Roberts wilderness study area is located in the Roberts Creek Mountains and contains approximately 15,090 acres of public land (approximately 0.3 percent of the resource area). It is oval shaped and surrounded on three sides by major valley systems. For the relatively small amount of acreage involved, the unit offers diverse features and characteristics not common in central Nevada.

The area is generally free from human imprints and is in a natural state. Those imprints present are substantially unnoticeable in the Roberts wilderness study area as a whole. Five ways are in the unit. Three fences protrude into the unit. No known water developments are present. A small mining prospect was found on the western side of the unit, but is substantially unnoticeable in the area as a whole. No potential exists for changing the area´s boundaries. The nature of the intrusions does not warrant their exclusion.

Ranches and roads outside the boundary are visible in the distance from certain points inside the Roberts wilderness study area. These are considered minor and may add to the wilderness experience by giving one a sense of remoteness and isolation, and also by heightening the user´s awareness and appreciation of the area´s outstanding wilderness values in contrast to sights and sounds outside the wilderness area.

There are no existing major noise sources outside the unit that would have an affect upon the wilderness experience. The potential does exist for two new mining operations to start in the future near the Roberts wilderness study area. Several roads form the boundary around portions of the unit. There may be vehicle sounds, but these would not adversely affect the wilderness character of the area. Currently, the roads are not heavily traveled.

The unit contains outstanding opportunities for solitude. Spread over an extremely jagged and varied topography the unit is characterized by narrow, deep canyons forested with willow, cottonwood, aspen, birch, and dogwood trees. Barren rock ridges and isolated stands of mountain mahogany and limber pine combine with the canyons to offer abundant natural screening and offer many opportunities for the user to find a secluded spot. The Roberts wilderness study area also offers outstanding opportunities for primitive and unconfined recreation. The unit offers a wide diversity of terrain, rain, vegetation and scenery. The massif consists of a series of rugged peaks forming a broken ridge. Numerous canyons and valleys surround the ridge breaking the unit into numerous areas.

Late spring through late fall is the best time for travel in the area. August and September can be hot (90 to 100 degrees) at the lower elevations but the higher slopes are usually pleasantly cool. Winter temperatures are extremely cold (very often sub-zero). High winds and almost perpetual clouds at the higher elevations make winter travel unadvisable except in the sheltered canyon bottoms. Snow depths at these lower elevations are usually sufficient for snow travel.

The Roberts Creek/Vinini Creek and the Dry Creek areas offer slopes of varying degrees and a variety of scenic attractions for cross-country skiing and snowshoeing. Suitable snow depths usually occur throughout this area.

Horseback riding is fairly easy throughout this area and access to the bowl just below the peak of Roberts Mountain is not difficult. For extended travel, one can climb out of the bowl and drop into the Pete Hansen or Dry Creek drainages.

The south side of the unit is steep and provides few opportunities to penetrate the unit. There are a number of small caves above Roberts Creek. Most are located on cliff faces and may require some degree of rock climbing ability. The rocks are Devonian sedimentaries with numerous fossils, but are crumbly.

The road along the south side of the unit provides access to the upper end of the south fork of Pete Hansen Creek and the routes previously discussed there.

Considering the small amount of acreage contained in the unit, the area offers a wide variety of special features. Much diversity in ecological features is found.

Because of its rapid change in elevtion, the unit exhibits a variety of habitats in close proximity to one another. These include the northern desert shrub community, a pinyon-juniper tree forest, a sub-alpine herbacious/sage community, and a scattered boreal forest of limber pine. Open stands of mountain mahogany replace the pinyon/juniper forest and subalpine vegetation in some areas, primarily on south-facing slopes.

The Roberts thrust, responsible for the mountain´s existence, is one of the great structural features of the intermountain west. This provides for excellent geological study. Universities as far away as Ohio and Nebraska, and students from England have participated in geologic field trips and mapping exercises in the area during the summer months. The main scientific values of the area are its "window on the mantle" characteristic, a geological formation associated with the Roberts Mountain Thrust Fault, and the ecological island aspect of the higher elevations. The unit offers much scenic value and dominates the view for miles around. Western Peak, a rocky, high-elevation point, is an interesting formation, and offers scenic value from many observation points outside of the unit. A small perennial twenty-five foot waterfall occurs in the north fork of Pete Hansen Creek. Two small seasonal ponds are found on Roberts Creek Mountain. Numerous caves and at least one natural arch are found in the rock cliffs within the unit.

Wilderness designation of the Roberts wilderness study area would create some problems for manageability due mainly to an unrecognizable boundary on the west and north sides. Installation of boundary signs at frequent intervals along this section would be necessary if the area were designated as wilderness. Closure of one way along the southern boundary may present a small problem for manageability because it would be difficult to prevent four-wheel-drive vehicles from using it. However, the area is considered to be manageable over the long term. There are no private inholdings or state lands within the area, but mining claims and leases do exist that have potential for further development. There are no rights-of-way proposed within or near the unit. Livestock grazing takes place throughout the unit and is a valid existing right.

Simpson Park Wildernes Study Area

NV-060-428

The Simpson Park wilderness study area is located in the Simpson Park Mountain Range and contains approximately 49,670 acres of public land (approximately 1.1 percent of the resource area). It is approximately seventeen miles long and five miles wide. The area is of sufficient size to offer a variety of wildlife habitat, vegetation, and topography.

The northern portion of the unit contains a substantial number of human imprints, a portion of which were missed during the initial inventory, that negatively affect its wilderness character. The southern portion of the unit is generally free from human imprints and is in a natural state. In the northern portion, disturbances from past and current mineral exploration activity (authorized under an interim management plan of operations) are present in Big Canyon, Moonshine Canyon, and Hiller Canyon. Following the approved plans of operation, these impacts will be rehabilitated to the point of being unnoticeable in the area as a whole prior to sending the suitability recommendations to Congress. A way extends into Moonshine Canyon approximately one mile, and at one point crosses the slope and connects into a road in the canyon lying directly south of Moonshine Canyon. A road extends into Big Canyon approximately one mile and turns into a way that continues approximately one more mile to a spring development. Numerous mining scrapes are also present in Big Canyon. Approximately one-half mile south of Big Canyon, a way follows the slope to a mining scrape near the top of the range.

A way extends into Hiller Canyon approximately a mile and one-half. A spring development is present farther up the canyon. Underwood Canyon has a cherry-stemmed road extending one and one-half miles into the unit. A spring development, located on forty acres of private property, is farther up the canyon. Wood Canyon has a way protruding five-eights of a mile into the unit. A spring development is farther up the canyon. At the head of Trail Canyon a road circles in and back out of the unit. A way and a fence extend a short distance into the unit on the west side of Ackerman Canyon.

In Salt Marsh Canyon, a way extends north from the private ground approximately one and one-fourth miles. Another way is present near the private ground farther into Ackerman Canyon. Cow Canyon has a way extending one mile into the unit. In Grubbs Canyon, a way extends a short distance west from the boundary of the private property.

Shagnasty Basin was identified during the wilderness inventory as unnatural. Numerous ways and old mining scrapes that were not identified during the inventory phase extend west from the boundary of the unnatural areas into the unit. One goes approximately one and one-half miles to another forty-acre parcel of private land within the unit. Further along on this way another way extends in one mile and then out of the unit. Another way extends from that way approximately one and one-half miles to Fagin Mountain.

Snow Water Canyon has a way extending from the cherry-stemmed road approximately one and one-half miles. Immediately north of Snow Water Canyon another way protrudes one mile into the unit. A way extends from the cherry-stemmed road in West Cottonwood Canyon and splits into two separate ways. Another way stems off from here towards Fagin Springs.

At Petunia Springs a way leads to a water development and from there it extends up the mountain approximately two miles and connects into the way extending from Cottonwood Canyon. A cherry-stemmed road extends into the unit approximately one and one-half miles just north of the north fork stream and turns into a way extending a mile and one-half both north and south of Buck Mountain. Numerous fences are present within the unit, mainly on the northern end.

Sights and sounds outside the boundary of the Simpson Park wilderness study area would have little affect on the quality of a wilderness experience within the unit. Lack of development and the remoteness of the area are the primary reasons for this. The area is long and narrow with private land protruding into the mountain range at various places. Private land borders the unit at five places: the Gund Ranch in the northeast portion, the Indian Ranch in the southwest portion, two places at the Ackerman Ranch, and at Grubbs Canyon in the southeast portion of the unit.

The diversity of opportunities for hiking, horseback riding, and hunting contribute to an overall outstanding opportunity for recreation.

No special features of geological, ecological, scientific, educational, scenic, or historical value are known to exist in the Simpson Park wilderness study area.

The Simpson Park wilderness study area is not considered to be manageable over the long term. Two private inholdings of forty acres each exist within the unit. Unfenced private inholdings of large acreage protrude into the unit on three sides. There is a large number of mining claims and mineral leases within the northern portion of the unit. The mineral potential of the area is good. Deposits of barite have been discovered. The impacts of probable mining could be difficult to rehabilitate. Identifying boundaries would present a problem because the majority of the boundary is located along topographic lines that are unrecognizable on the ground. The large number of roads and ways associated with the unit also present a problem for manageability. Closure of all these ways would not be feasible and motorized vehicle traffic could not be controlled.

RECREATION

In Nevada, preference is higher for dispersed recreation activities such as hunting, off-highway vehicle use, rock hounding, fishing, hiking, backpacking, and nature study, than for more site-specific or structured activities (Nevada Division of State Parks, 1981b).

Opportunities for outdoor recreation in the Shoshone-Eureka Resource Area are generally of the dispersed, non-developed type. According to a recent study (Nevada Division of State Parks, 1981a) a significant portion of participation in dispersed recreation within Nevada takes place within the resource area. Lander and Eureka counties with 0.7 percent of the state´s total population host 9.7 percent of the state-wide primitive camping; 2.8 percent of hiking and backpacking; 10.6 percent of rock hounding; 4.5 percent of horseback riding; 11.6 percent of exploring; 16.9 percent of hunting; 4.8 percent of photography; 4.7 percent of sightseeing; and 0.1 percent of fishing.

There are no off-road vehicle use restrictions within the resource area except within wilderness study areas where motorized vehicle use is limited to existing travel routes. Off-road vehicle travel off existing routes may take place in wilderness study areas for mineral exploration and development activity under the 3802 regulations in conformance with an approved plan of operation.

MINERAL EXPLORATION AND DEVELOPMENT

The Shoshone-Eureka Resource Area contains a wide variety of metallic and industrial mineral deposits. Many are of considerable economic significance. They include copper, barite, gold, silver, lead, zinc, antimony, molybdenum, iron, turquoise, sand and gravel. Much of the mineral extraction activity takes place on unpatented mining claims on public lands. Extensive exploration work is currently taking place.

The mineral potential of the three wilderness study areas and the 500-acre parcel adjacent to the Antelope wilderness study area are discussed below. Table 3-5 is a summary of the mineral potential of the three wilderness study areas. The mineral potential combined with a confidence rating indicates the potential an area has for mineralization and the amount and quality of data upon which the potential rating is based. For more information about the mineral potential of each wilderness study area, refer to the technical report available from the Battle Mountain District Office (USDI, BLM, 1983).

Locatables

Roberts Wilderness Study Area

The locatable mineral potential of the southern third of the Roberts wilderness study area is high (see the Roberts Mineral Potential and mining claim map in the Wilderness Technical Report) for both base and precious minerals based upon indirect evidence. The structural features, stratigraphic characteristics, gravity data, aeromagnetic data, and the presence of numerous intrusive bodies all are favorable for mineral accumulation. The northern two-thirds of the area has moderate potential for locatable minerals based upon both abundant direct and sketchy indirect evidence. Barite, a locatable mineral, is rated as having moderate potential for the entire wilderness study area.

Antelope Wilderness Study Area Plus an Additional 500 Acres

The locatable mineral potential of the Antelope wilderness study area is generally low with a low degree of confidence. There is potential, but, there are few data to support this conclusion.

Most of the area is covered by several hundred feet of Tertiary volcanics related to the Williams Ridge caldera complex. Underlying limestones and dolomites are faulted and fractured which could be a good depositional environment for metallic mineralization. The basic ingredients for mineral accumulation are present within the wilderness study area, but to date, no evidence of mineralization has been discovered. The area is rated as having low potential for locatable minerals based upon sketchy indirect evidence.

The locatable mineral potential of the 4800-acre parcel around Crested Wheat Ridge is similar to that of the entire Antelope wilderness study area.

Simpson Park Wilderness Study Area

The locatable mineral potential of the Simpson Park wilderness study area is very high. The northern end of the area has known outcrops of barite and excellent potential for additional deposits. The available data provide abundant direct evidence to indicate high favorability for accumulation of mineral resources in the northern end of the Simpson Park wilderness study area.

Table 3-5 Summary of Geology, Energy, and Mineral Classification Ratings for the Simpson Park, Roberts, and Antelope Wilderness Study Areas.

Commodity	Simpson Park		Roberts		Antelope	
	Rating	Approximate area within the WSA1/	Rating	Approximate area within the WSA	Rating	Approximate area within the WSA
Locatables:						
Barite	4D2/	Northern 1/8	3B	All	1A	All
	3C	Northern 1/2 (excluding 1/8 shown above)				
	2B	Isolated pockets				
	1A	Southern 1/2				
Precious and Base Metals	(2A)3/	All	3D	Southern 1/3	4B	All
			3B	Northern 2/3		
Uranium	2B	All	2B	All	2B	All
Leasables:						
Oil and Gas	1C	All	1C	All	2A	All
Geothermal	(3B)	Extreme western edge	2A	All	3A	Western 1/2
	1A	Majority of the unit			2A	Eastern 1/2
Sodium and Potassium	1D	All	(1D)	All	(1D)	All
Phosphate	(2B)	All	(3B)	All	(3B)	All
Saleables:4/						
Stone	3C	All	3C	All	3C	All
Sand and Gravel	1A	All	1A	All	1A	All

Source: Great Basin GEM Joint Venture, January 11, 1983 a, b, c, and professional judgement, Shoshone-Eureka Resource Area Geologist.

1/ wilderness study area

2/ CLASSIFICATION SCHEME, 1) Very low potential; 2) Low potential; 3) Moderate potential; 4) High potential.

LEVEL OF CONFIDENCE SCHEME, A) Data are insufficient; B) Indirect evidence only; C) Minimal direct evidence; D) Abundant direct evidence.

3/ Ratings in parentheses are the professional judgement of the Shoshone-Eureka Resource Area Geologist, not necessarily the rating used in the Geology, Energy and Minerals technical reports.

4/ These materials are readily available within the resource area at locations more accessible than the WSAs.

There are presently three mining plans of operation on record for this area. Upon release from wilderness interim management procedures further exploration would occur. Extraction of the identified locatable mineral resources would be expected.

Leasables

Roberts Wilderness Study Area

The leasable minerals potential for the Roberts wilderness study area is very low for oil, gas, sodium, and potassium; moderate for phosphate; and low for geothermal resources. Oil, gas, sodium and potassium will not be discussed any further in this section due to their low probability of occurrence.

Phosphate-bearing sections are reported to occur in the Vinini formation by Rogers, et. al., 1970. The section of occurence is reported to be on Vinini Creek immediately east of the study area. The Vinini formation is known to occur within the boundaries of the wilderness study area itself and this indirect evidence is the basis for the moderate rating.

Geothermal potential is greatest along the prominent faults of the north boundary of the Roberts wilderness study area. Large-scale faulting permeates the entire area and presents a good source for circulation of thermal waters. The geothermal potential is classified as low based upon insufficient data.

Antelope Wilderness Study Area
Plus an Additional 500 acres

The leasable mineral potential of the Antelope wilderness study area is generally low. Sodium and potassium compounds have a very low potential and will not be discussed further. Phosphate is rated as moderate; oil and gas potential is low; and geothermal potential is rated as moderate.

Phosphate-bearing formations are reported to occur within the Antelope Range by Rogers, et. al., 1970, however the precise locations of these occurrences are uncertain. The Rogers report is of such a general nature that assumptions of location, quantity and grade cannot be made. Phosphate potential is classified as moderate based on indirect and sketchy data.

Oil and gas potential is low with source rocks possibly below the volcanic caprock covering the surface. The oil and gas potential is rated as low based upon insufficient data.

Geothermal potential is rated as moderate based upon indirect evidence. Large deep-seated faults bound most of the mountain ranges in Nevada. These structural environments are host to literally hundreds of thermal sites elsewhere in the state. The Antelope Range is bordered by such deep-seated faults.

The leasable mineral potential of the 4,800-acre parcel around Crested Wheat Ridge is similar to that of the entire Antelope wilderness study area.

Simpson Park Wilderness Study Area

The leasable mineral potential of the Simpson Park wilderness study area is very low for oil, gas, sodium; low for phosphate; and moderate for geothermal resources. Oil, gas, sodium, and potassium will not be discussed any further in this section due to their low probability of occurrence.

Phosphate-bearing sections are reported to occur in the Vinini forma tion by Rogers, et. al., 1970. No phosphate is specifically reported in the Simpson Park wilderness study area itself, however the Vinini formation does cover a significant portion of the study area. Therefore, the mineral potential for phosphate is rated as low based upon indirect evidence.

Geothermal potential is greatest along the range front fault on the west side of the Simpson Park Range. Walti Hot Springs, four miles north of the wilderness study area, exhibits artesian flow of approximately five hundred gallons per minute with a measured temperature of 73 degrees centigrade (162 degrees farenheit). The geothermal potential is rated as moderate only due to lack of identified thermal springs at the surface.

ENERGY AND UTILITIES

Surface manifestations of geothermal resources are present in the resource area in the form of numerous hot springs and fumaroles. Part of one known geothermal resource area (Beowawe KGRA) and six prospectively valuable areas for geothermal resources have been identified by the U.S. Geological Survey in the resource area. These areas are in Reese River Valley, Grass Valley, Smith Creek Valley, Antelope-Kobeh valleys, Monitor Valley and Big Smoky Valley (Godwin, 1977). A small experimental geothermal power plant is planned for the area just west of Beowawe.

Much of the resource area is presently leased for oil and gas exploration and development. However, the U.S.G.S. has identified lands valuable for oil and gas primarily within Eureka County (USDI, USGS, 1980). At the present time there are no producing oil or gas wells.

Major utility systems in the Shoshone-Eureka Resource Area are the Southwest Gas line near Battle Mountain and the Sierra Pacific 230 Kv transmission line which passes by Eureka and Austin paralleling U.S. Highway 50. A tie-in into this line conducts power to the south along the eastern side of Big Smoky Valley. Other utility systems, which are scattered throughout the resource area, are generally limited to local power and telephone distribution lines.

ECONOMIC CHARACTERISTICS

The Shoshone-Eureka Resource Area includes most of Lander and Eureka counties and small portions of northern Nye County. However, the affected environment, for purposes of economic analysis, is confined to Lander and Eureka Counties. Any potential for population, employment, or income effects beyond this area is negligible.

Population

Table 3-6 shows population data and projections for the study area. Both Lander and Eureka Counties are predominately rural and sparsely populated with population density in Lander County averaging about 0.9 persons per square mile and Eureka County approximately 0.3 persons per square mile. The population is concentrated in the unincorporated towns of Battle Mountain (Lander County seat), Austin, Kingston, Eureka (Eureka County seat) and in developed farm areas along the Reese River and in Diamond Valley. A small segment of the population lives on ranches scattered throughout the resource area. The 1980 population for Battle Mountain was estimated at 3,596 persons which represented 88 percent of the Lander

Table 3-6 Affected Area Population and Projections

	1970	1980	% change 1970-1980	1982 Estimate	Projections 1990	Projections 2000
Lander County	2,666	4,082	53.1	5,261	6,293	7,662
Eureka County	948	1,198	26.4	1,395	1,762	2,145
Total	3,614	5,280	46.1	6,656	8,055	9,807

Source:

Draft Shoshone-Eureka Resource Management Plan

Table 3-7 Total Income and Employment in 1980 for Lander and Eureka Counties

	Employment		Income	
	Persons	Percent	$1,000	Percent
Agriculture	273	9.1	4,597	8.8
Mining	1,344 1/	44.6	30,762 1/	58.9
Construction	85 1/	2.8	2,706 1/	5.2
Trade	428 1/	14.2	4,243 1/	8.1
Services	100	3.3	1,415	2.7
Government	520	17.3	6,689	12.8
Other	262	8.7	1,809	3.5
Total	3,012	100.0	52,221	100.0

Source: Regional Economic Information System, Bureau of Economic Analysis, 1982.

1/ BLM estimates.

County population at that time.

Income and Employment

Table 3-7 lists the sectoral and total income and employment and relative importance of each sector for the study area composed of Lander and Eureka Counties. Figures for 1980 show mining, government, trade, and agriculture to be the primary sources of employment.

Unemployment rates as of September 1980 were 4.2 percent for Lander County and 2.1 percent for Eureka County. The Nevada State average rate was 6.4 percent at that time. The unempoyment rate has increased since the 1980 figure, reaching 11.3 percent in Lander County and 16.5 percent in Eureka County as of January 1983. The more current high unemployment rates largely reflect the reduction of mining activities in response to national economic conditions.

In 1980, mining provided the major source of income, estimated at 55.0 percent of total income for the two counties. Government, agriculture, and trade followed, in that order. Annual per capita personal income for 1980 was $9,979 in Lander County and $11,538 in Eureka County, while the state average was $10,723.

Affected Sectors

Mining and livestock-oriented agriculture are the major basic industries, and most of the commodities are either imported or exported. The economic structure is relatively simple with wholesale and retail trade composed largely of outside purchases.

Mining

The importance of mining, and its impact on income, employment, and social values of the area can be readily assessed by the value of nonfuel mineral porduction. In 1979, Eureka County provided $40.9 million, and Lander County $49.1 million of mineral production. Taken together ($90 million), this represents 34.6 percent of the total state production ($260.2 million). In 1980, mining provided 43.3 percent of the employment and 59.6 percent of the income in Lander County, and 48.6 percent of total employment and 57.2 percent of total income in Eureka County.

Agriculture

Agriculture production in the resource area consists of cattle, hay, sheep and alfalfa seed. Livestock predominates. Cash receipts from marketings in 1980 totaled $6.8 million in Eureka County with $4.9 million from meat animals and other livestock and $1.9 million from crops. Lander County cash receipts totaled $4.6 million, $4.0 million from livestock and $0.6 million from crops. In 1980, agriculture provided 16.6 percent of employment and 23.7 percent of income in Eureka County, and 6.6 percent of employment and 3 percent of income in Lander County.

Livestock have been using about 240,000 animal unit months of public land forage in the resource area. This acounts for about 37 percent of the total forage requirement and depicts the high average dependency on public land. Table 3-8 describes typical ranch budgets for operations in the area. These budgets have

Table 3-8 Returns and Costs for Cattle Operations in the Shoshone-Eureka Resource Area (values are in dollars per cow)

	Federal Grazing	
	Summer Only	Year Round
	Sale Returns	
Sales Items		
Steer calves	135.60	130.50
Heifer calves	71.28	62.57
Cull cows	59.58	57.28
Cull bulls	7.64	7.56
Alfalfa hay sales		14.25
Total returns	274.10	272.16
	Production Costs	
Cash Cost Items		
Raised alfalfa hay sold		4.60
Raised alfalfa hay fed	58.51	9.20
Raised grass hay fed	7.98	8.82
Government grazing fees	15.34	19.82
Hired labor	23.75	35.63
Veterinary expenses	1.89	1.56
Hired trucking	2.17	2.43
Marketing commission	1.47	1.56
Fuel	6.50	6.85
Repairs and maintenance	2.36	4.48
Accounting	1.32	1.32
Brand inspection	.32	.32
Salt and minerals	1.09	1.09
Fencing	1.36	1.36
Bull	25.21	25.21
Horses	1.55	1.55
Taxes	4.50	3.40
Dues	.49	.40
Other cash costs	12.26	4.08
Total Cash Costs	168.07	133.68
Other Cost Items		
Family labor	71.25	59.37
Equipment and machinery depreciation	30.03	14.71
Interest on brood stock	74.75	74.75
Interest on equipment and buildings	3.37	1.97
Total other costs	179.40	150.80
Total costs	347.47	284.48
Return above cash costs	106.03	138.48
Return above cash costs and family labor	34.78	79.11
Return to total investment 1/	4.75	64.40
Net ranch income 2/	76.00	123.77

Source: USDI, BLM, 1982b
Resource Concepts, Inc., 1981

1/ Return to total investment equals sales (gross income) minus cash costs, depreciation, and family labor. No estimate is included for interest on land or for opportunity cost.

2/ Net ranch income is calculated by deducting cash costs and depreciation from sales (gross income). The remaining revenue (net ranch income) is available to service long-term debts on land and capital, to provide income to family labor, and to provide a return to risk and management.

been adapted from a study by Resource Concepts, Inc (1980) and from the Schell Grazing Environmental Impact Statement (USDI, BLM, 1982). Ranches have been classified by season of resource use rather that by size, as previous studies (Ulrich, 1980 and Torell, 1980) have proven that aggregating ranch operations by similar resource provide a more effective analysis than classification by size of operation. Two particular seasonal characteristics have been identified: (1) federal range grazing year-round and (2) federal range grazing during the summer only.

No budgets have been developed for sheep operators because of the possibility of disclosure of an individual operation. While several permittees conduct a cattle and sheep operation, only 1 operator was identified within the resource area operating an exclusively sheep enterprise.

Of the 66 active permittees in the resource area, 51 were classified as having permits for year-round use of the public range, with an average herd size of 731 head. The 15 ranch operations identified as utilizing public range during the summer only had an average herd size of 355 head.

Cow-calf operations predominate in the resource area, and the typical budgets were developed to reflect that operation. Though several operators do conduct cow-yearling enterprises, their numbers were not sufficient to require an additional typical budget for analysis purposes.

Historically, the economic benefits derived by area ranchers from the use of public range have exceeded the fees they are charged. The existence of this imbalance, or "consumer surplus," has meant that ranchers are willing to pay extra for the opportunity to use public lands, thereby causing the grazing permit to acquire a market value (Vale, 1979; Neilson and Workman, 1971). The permits can be bought or sold in the market place, or used as collateral for loans (Corbett, 1978). Although not officially recognized as real property, Bureau of Land Management permits have nonetheless become an integral element in the capital and credit structure of area ranchers. Currently, the market value of federal animal unit months averages about $50 (Falk, 1980).

Permit market value is based upon active preference, which is the total number of animal unit months a rancher is authorized to use. Total active preference in the Shoshone-Eureka Resource Area is 300,572 animal unit months. At an average market value of $50 per animal unit month, bureau grazing permits in themselves contribute $15,028,600 to the wealth of area ranchers.

Lands

The Bureau of Land Management administers about 3.0 million (83%) of the approximately 3.6 million acres in Lander County and about 2.0 million (74%) of the approximately 2.7 million acres in Eureka County. These figures include public lands within the bureau´s Elko District. Approximately 487.5 thousand acres in Lander County and 529.8 thousand acres in Eureka county are under private ownership. Potential changes in the proportion of public to private lands would affect both the tax base and Bureau of Land Management payments to the counties in lieu of property taxes.

Table 3-9 Current and Projected Sales of Woodland Products

	Current Use					1990 Projection 1/		
	FY 82 Sales (Units)	Permit Fee Per Unit ($)	Revenues Received by BLM ($)	Fair Market Value Per Unit ($)	Estimated Total Retail Value ($)	Demand (Units)	Estimated BLM Revenues ($)	Estimated Total Retail ($)
Firewood	500 cords	5.00	2,500	100.00	50,000	3,000	15,000	300,000
Juniper Posts	5,300 Posts	0.40	2,120	3.00	15,900	6,000	2,400	18,000
Christmas Trees	3,300 Trees	2.00	6,600	12.00	39,600	6,600	13,200	79,200
Pinyon Nuts	52,500 pounds	0.20	10,500	4.00	210,000	52,500	10,500	210,000
Total Values			21,720		315,500		41,100	607,200

Source: Current Use: BLM files
1990 Projections: District Forester´s Professional Judgement

1/ Estimated 1990 revenues calculated at current prices

Assessed valuation for Lander and Eureka Counties in the fiscal year 1980-81 amounted to $45,340,053 and $46,442,020 with tax rates per $100 of assessed valuation at 2.6469 and 2.1365, respectively.

Bureau of Land Management payments in lieu of property taxes for fiscal year 1981 amounted to $204,100 for Lander County and $59,900 for Eureka County.

Total operating revenues for the county governments, from all sources, for the fiscal year ended June 1982, were $2,300,000 for Lander County and $2,100,000 for Eureka County.

Forest Products

Table 3-9 shows current demand and values, and projections for 1990, for all forest products currently harvested from the public lands. Revenues received by the Bureau of Land Management from permit sales of these products, valued at the current fee, are expected to almost double from $21,720 to $41,100 by 1990. Estimated total retail value of these products is expected to increase from $315,000 to $607,200 at current prices.

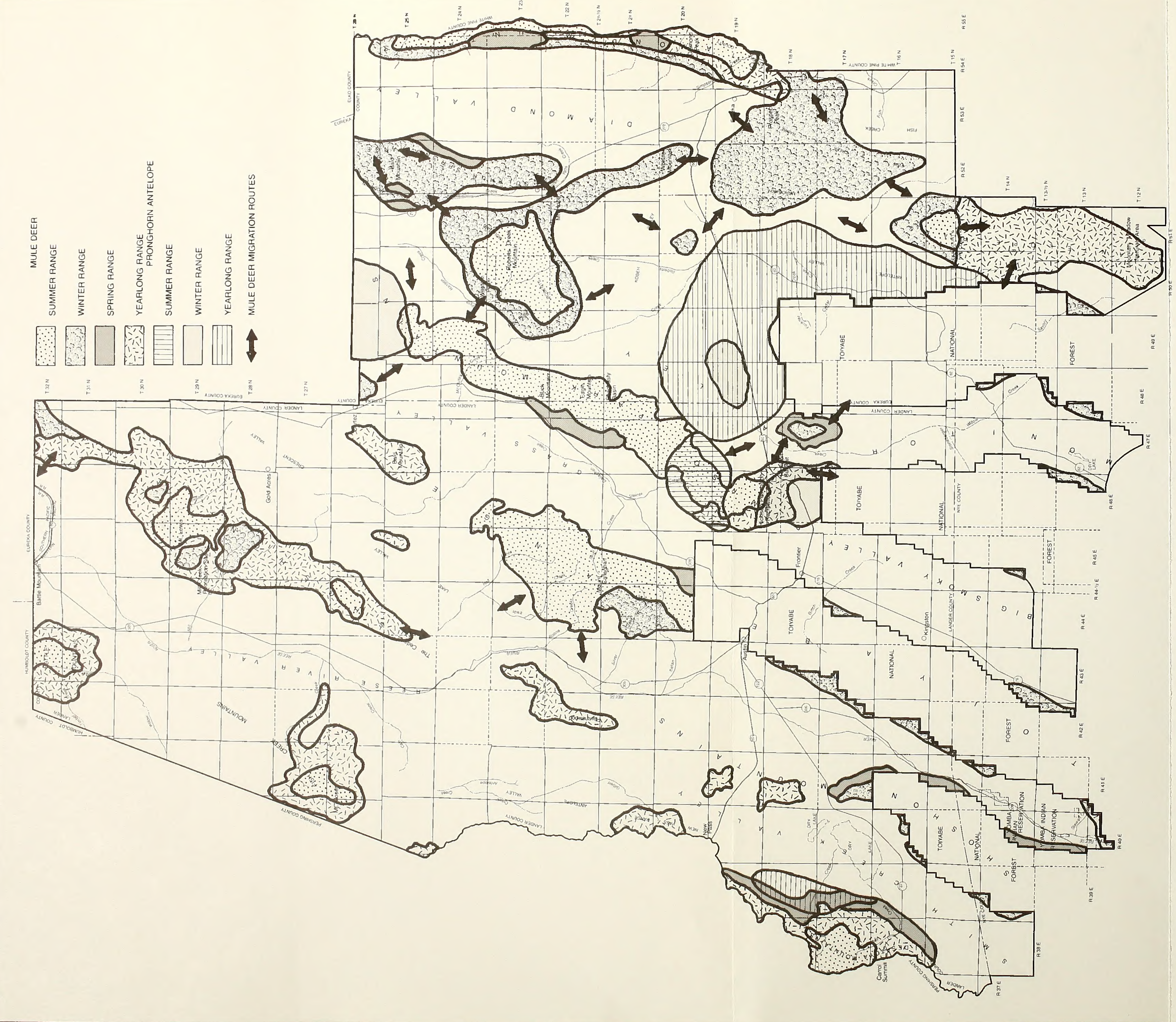
Wildlife and Recreation

The proposed action and alternatives would affect wildlife populations in some portions of the resource area. These population adjustments are expected as a result of alteration of habitat conditions, as well as changes in the amount of vegetation allocated to wildlife. Adjustments in wildlife populations will influence the number of hunter days, thereby impacting expenditures, income, and employment. Based on the estimated last 3-year average use, approximately 16,550 hunter days per year were expended pursuing affected game species. Expenditures associated with these hunter days are estimated to total $384,000 (1980 dollars) per year and provide $113,500 in resource area income.

While other recreational activities contribute to the area economy, these activities are not expected to be significantly impacted, and are not considered further.

SOCIAL CHARACTERISTICS

Local residents generally share in the traditional value systems typical of isolated rural areas of the west, modified somewhat by the "boom and bust" characteristics of mining activity. Social attitudes and mores are basically conservative. These include strong family ties and emphasis on self-sufficiency and personal initiative. The people of the area place high value on traditional use of the land.



MILES
KILOMETERS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHOSHONE-EUREKA R M P

3-1 BIG GAME USE AREAS

1983

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter discusses the significant environmental impacts anticipated from implementation of specific management actions under the alternatives. Appendix B defines the thresholds used to identify significant impacts resulting from management actions. Thresholds have been established for relevant components of the affected environment. Impacts can be either beneficial or adverse, depending upon the effect on a particular component of the existing environment. Cumulative impacts are summarized for each environmental component in the comparative review section of the Summary. Professional judgement has been used to determine the nature and significance of impacts where data are unavailable.

Numbers given are approximate projections. The reader should not infer that they reflect precise "down to the last acre" estimates.

The administrative action of designating utility corridors does not extend to the impacts of actual utility transmission line construction. Utility companies have not proposed construction of any bulk transmission lines. The impacts from actual placement and construction of transmission lines will be addressed in future site-specific environmental analysis documents.

The extent of cultural resources within the resource area is unknown. Potential impacts upon cultural resources are based upon the district´s project implementation experience since 1976. In most cases, the actual number of sites impacted is expected to be less than the number given. The potential number of sites impacted shows the relative impact of an alternative. Following standard operating procedures, impacts to most sites would either be avoided or reduced.

Impacts to air quality, water quality, and soils were analyzed and determined to be insignificant and will not be discussed further.

Impacts to mineral exploration and development from wilderness designation under the three alternatives and the no action alternative were estimated using the mineral potential classification system shown in Table 3-5. The mineral potential combined with a confidence rating indicates the potential an area has for mineralization and the amount of data available.

Additional information about the mineral potential of each wilderness study area under consideration may be found in the GEM (Geology, Energy, and Minerals) reports prepared for each area and the wilderness study technical report available from the Battle Mountain District office.

ANALYSIS ASSUMPTIONS

In order to analyze the impact from the management actions of each alternative it was necessary to make some assumptions. These are listed below to aid the reader in reviewing the impacts.

1) Bureau of Land Management would have the funding and work force to implement and supervise the selected alternative.

2) Implementation of the resource management plan would begin in 1984, with short-term actions being completed within 5 years and long-term actions over a 15 year period.

3) Short-term impacts occur within 5 years and long-term impacts occur from 5 to 15 years. All impacts would be long-term unless otherwise stated.

4) Impacts are direct unless otherwise noted as being indirect or cumulative.

5) Impacts would be monitored and management adjusted as necessary, based on new data from evaluation and monitoring procedures.

6) Baseline data for vegetation condition and trend, habitat condition, and other parameters is the best available. While this data is not adequate by itself for making forage allocation decisions, it is adequate for planning and analysis purposes. Data was extrapolated when necessary to cover areas for which no data was available.

7) The Standard Operating Procedures set forth in Chapter 2 would be used in implementing the resource management plan. Impacts which would be mitigated through these procedures are not discussed.

8) Environmental analyses (including categorical exclusions) would be conducted prior to implementing any activity level plans.

PREFERRED ALTERNATIVE IMPACTS

The environmental consequences of this alternative are summarized in Table 4-1 by resource conflict area.

LAND OWNERSHIP

1. An estimated 58,440 acres of public land would be transferred to other ownership.

Based upon professional judgement, the identification of a 104,959-acre pool of lands would result in the estimated disposal of approximately 45,000 acres over a 15-year period. This disposal would result in the following percentage changes in land tenure within the resource area. Public land would decrease from 91.5 percent to 90.5 percent. Private land would increase from 8.5 percent to 9.5 percent.

Disposal would meet some community expansion needs, eliminate isolated parcels in agricultural areas, and would provide some lands for commercial and industrial development.

Disposal would result in the transfer, to private ownership, within 15 years, of up to 13,440 acres (not included in the disposal pool) of public land suitable for agriculture. This represents a 0.3 percent reduction in the number of acres of public lands within the resource area.

Table 4-1 Impacts of the Preferred Alternative by Resource Conflict Area

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA[1]	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
LAND OWNERSHIP					
Acres disposed	28,402	6,028	17,985	6,025	58,440(1%)[3]
WOODLANDS					
Acres harvested	3,937	200	3,937	3,176	11,250(2%)[4]
Acres of harvest base removed	0	0	11,300	0	11,300(2%)[4]
Availability of woodland products	Public demand for woodland products would be met.				(SA)[5]
WILDLIFE					
Riparian habitat condition[2] (acres) projected long term					
Poor	140	150	640	120	1,050(-15%)[6](SB)
Fair	60	70	600	140	870(+4%)
Good	590	150	1,710	190	2,640(+11%)(SB)
Aquatic habitat condition[2] (miles of stream) projected long term					
Poor	14.7	8.7	14.8	6.6	44.8(-1%)[6]
Fair	5.4	3.3	15.7	4.8	29.2(-38%)
Good	28.5	12.0	33.5	11.0	85.0(+39%)(SB)
Reasonable numbers	Animal unit months for reasonable numbers of big game animals (mule deer and pronghorn antelope) would be available in the long term. (+33%)[6] (SB)				

Table 4-1 Impacts of the Preferred Alternative by Resource Conflict Area (Continued)

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA[1]	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
WILD HORSES					
Number of animals short term	2,033	0	1,347	280	3,660
LIVESTOCK GRAZING					
Availability of forage (animal unit months)					
current use/ 5-year average licensed use	89,836	16,355	107,942	26,241	239,317
projected short term	92,643	16,276	112,459	25,155	246,533(+3%)[6]
projected long term	105,837	15,759	118,826	25,422	265,844(+11%)(SB)
VEGETATION					
Long-term change[6] in ecological condition(%)	+16(SB)	0	+6	0	+9
Long-term change[6] in vegetation trend (%)	+25(SB)	+12(SB)	+2	+3	+12
Riparian vegetation condition[7]					
CULTURAL RESOURCES					
Potential sites protected	0	0	1,382	0	1,382
Potential sites disturbed					1,266 (SA)
WILDERNESS					
Acres protected	N/A	N/A	98,690(SB)	N/A	98,690
Acres not protected	N/A	N/A	54,470(SA)	N/A	54,470
RECREATION					
Hunter days short term					18,200(+9%)[6]
long term					21,900(+33%)(SB)
Primitive vehicle ways closed (miles)	0	0	11.5	0	11.5
MINERAL EXPLORATION AND DEVELOPMENT					
Acres restricted due to wilderness recommendations	0	0	98,690(SA)	0	98,690
ENERGY AND UTILITIES					
Bulk transfer of energy	The proposed network of corridors would satisfy all expected needs for transmission facilities during the life of the plan. (SB)				

Source: Shoshone - Eureka planning team estimates

[1] Resource conflict area

[2] Threshold is good or better condition. Some areas included in good condition class may actually be in excellent condition.

[3] Portion of total public land (4.3 million acres) within the resource area

[4] Portion of total woodland harvest base (600,000 acres)

[5] SB = significant beneficial impact
SA = significant adverse impact

[6] Percent change from existing situation

[7] Values for riparian vegetation condition are the same as those for riparian habitat condition in the wildlife section.

WOODLANDS

1. The resource area's harvest base would be reduced.

Wilderness designation and land disposal would reduce the woodland harvest base by a total of 11,300 acres. This 1.9 percent reduction exceeds the 1 percent threshold of significance. The reduction would have no effect upon the capability of the public lands to meet the expected demand for woodland products.

Designation of 82,600 acres of the Antelope wilderness study area, and 500 acres adjacent to the northern boundary of the Antelope area would result in approximately 5,000 acres of potentially-manageable woodland being withdrawn from management for woodland products. Designation of 15,090 acres of the Roberts wilderness study area would result in approximately 1,300 acres of potentially-manageable woodland being withdrawn from management for woodland products. Disposal of 45,000 acres would include approximately 5,000 acres of pinyon-juniper woodland. This action would result in the immediate loss of approximately 40,000 cords of fuelwood and 25,000 Christmas trees as a result of the removal of this acreage from the overall woodland management base.

2. Trend of stand condition would improve on 11,250 acres of pinyon-juniper woodland.

Selective harvest of pinyon-juniper woodland for woodland products would improve overall forest productivity, stand health, and vigor on approximately 11,250 acres over the 15-year implementation period. This represents harvest on slightly less than 2 percent of the total woodland management base over the implementation period.

3. Public demand for wood products would be met.

Approximately 3,000 cords of fuelwood, 6000 juniper posts, 6600 Christmas trees and 52,500 pounds of pine nuts would be harvested annually. This rate of harvest would adequately meet demand and be well within sustained-yield limitations.

WILDLIFE HABITAT

1. Terrestrial wildlife habitat would generally improve.

Implementing allotment management plans and grazing systems would generally benefit wildlife habitat by controlling livestock distribution and utilization of forage on five allotments in the short term and ten more in the long term.

Range improvement projects would be both beneficial and adverse to wildlife. Fences would improve livestock distribution and forage utilization, but would also impair deer and pronghorn antelope movements. Water developments would provide water for wildlife in areas presently lacking it, but would also increase livestock use in these areas causing livestock to concentrate around waters, discouraging their use by big game. Seedings would defer livestock use on native spring range allowing wildlife first use of new, succulent growth. Seedings would also provide some additional forage for big game. Monotype grass seedings, however, would reduce habitat diversity in localized areas and adversely impact small animals (Reynolds and Trost, 1980). Overall, the cumulative impacts of range improvement projects would be beneficial to wildlife.

The implementation of habitat management plans and habitat improvement projects would be a significant benefit to wildlife. Approximately 30 percent of the wildlife habitat in the resource area would improve one condition class as a result of these actions. The proposed seedings and prescribed burns would provide additional forage and increase habitat diversity in the Eureka resource conflict area. The additional waters would improve wildlife habitat by providing dependable water, primarily to small game. Providing habitat to support the release of 200 pronghorn antelope by Nevada Department of Wildlife would benefit the species and help achieve reasonable numbers.

Wilderness designation of 98,190 acres in two wilderness study areas would benefit wildlife habitat through the overall resource protection such designation would provide.

The harvest of 3,750 acres of pinyon-juniper in the short term and 11,250 acres in the long term would increase wildlife habitat diversity, provide additional forage for wildlife and improve mule deer winter and year-long ranges where most of the harvest would occur.

Long-term impacts of management actions would be similar to those discussed for the short term. Additional seedings, whether to increase forage for livestock or for wildlife habitat improvement, would provide more forage for big game. Additional water developments would allow wider distribution of big game and availability of more forage. It is expected that wildlife habitat would improve in those areas receiving allotment management plans, grazing systems, or habitat management plans in the long term.

2. Mule deer winter ranges in the Eureka resource conflict area would be adversely affected by land disposal.

Approximately 3,740 acres in one mule deer winter range is identified for potential disposal in the Eureka resource conflict area. The loss of this land would be a significant impact as it represents approximately 11 percent of one deer winter range and is also a migration route between Sulphur Spring Range and Whistler Mountain. In the worst case, loss of this area would prevent mule deer populations attaining reasonable numbers in the Eureka resource conflict area.

3. Wildlife habitat on areas not receiving activity plans would remain in current condition.

Wildlife habitat in those areas not receiving allotment management plans or habitat management plans in the short or long term would remain at current condition. These areas include approximately 30 percent of the big game habitat in the resource area. The majority of this habitat is estimated to be in fair condition with approximately equal amounts in good and poor condition (Professional judgement, District Wildlife Staff). Livestock use will be monitored and adjustments made to achieve sustained yield over the long term. Hence, no further change in condition would be expected.

4. Approximately 840 acres of protected riparian habitat would improve, while unprotected riparian habitat would remain static or decline.

Approximately 840 acres of riparian habitat would improve and another 1,080 acres would be maintained in good condition in the short term.

In the long term, an additional 960 acres of riparian habitat would improve to good condition and 1,920 acres would remain in less than good condition or continue to decline. Short-term and long-term improvement would result in an 11 percent increase in areas in good condition compared to the existing situation. This would be a significant beneficial impact. Table 4-1 shows projected riparian habitat condition by resource conflict area.

The improvement in riparian habitat condition would improve wildlife habitat diversity and increase the number of wildlife using riparian areas, particularly sage grouse and non-game birds.

5. Reasonable numbers of big game would be achieved in the long term.

The cumulative effect of the preceding impacts would be a general improvement in habitat condition and would result in reasonable numbers of big game being achieved in the long term, a significant beneficial impact.

6. Thirty-six miles of protected aquatic habitat would improve, while unprotected aquatic habitat would remain static or decline.

Any aquatic habitat improved from a declining state would result in direct benefits to fisheries and water resources. In the short term 36 miles of stream would be protected and improved and 17 miles of streams would be maintained in good condition. The 53 miles of streams include 21 miles of historic Lahontan cutthroat trout habitat proposed for restocking by the Nevada Department of Wildlife (Coffin, 1982). Improving condition of these streams would benefit a federally-listed threatened species.

The improvement of riparian vegetation would benefit aquatic habitat by 1) shading streams and providing cover for fish, 2) stabilizing stream banks, reducing erosion (although occasional stream bank and channel alterations are natural and would still occur), and allowing development of quality pools, and 3) maintaining the microclimate of the stream/riparian environment.

Unprotected aquatic habitat condition would continue to decline as a result of many factors including livestock grazing, mining activities, wild horse use, and road construction.

In the long term, aquatic habitat would be improved to good condition on approximately 43 more miles of streams as a result of additional projects and activity plan implementation. Aquatic habitat in good condition would increase by 39 percent compared to existing situation, a significant beneficial impact.

Aquatic habitat on 74 miles of streams would remain in less than good condition or continue to decline.

WILD HORSES

1. Wild horse numbers would not change. The free-roaming nature of wild horses would be adversely impacted.

Wild horse numbers would not change in the short term. The present relationship between livestock and wild horses would continue, which would not be a significant impact to wild horses. Range improvement projects in the herd use area would be both beneficial and adverse to wild horses. Water developments for livestock would provide additional watering sites for wild horses, however, new fences constructed in herd use areas would interfere with free-roaming behavior of the herds. Fences would be constructed to reduce interference with herd movements, however any obstruction to normal herd movements would be a significant adverse impact. Multiple-use seedings developed in herd use areas would improve currently-used habitat and provide additional forage for wild horses.

For analysis purposes, it is assumed that horse gathers would be carried out to maintain existing numbers. Additional gathers, to stabilize ecological condition and trend would also be accomplished in the short term, as necessary to meet objectives.

During gathering operations some death or injury to horses would occur due to difficulties associated with capturing wild animals. Operations would be designed to prevent more than 2 percent death loss. During past gathers in the resource area, death loss has been well below this 2 percent limit (Battle Mountain District Files).

2. The condition of wild horses would improve.

Developing and implementing herd management area plans would benefit wild horses. Plans would be developed for individual herd use areas. These plans would describe a management strategy for maintaining an optimum population, proper sex and age ratios, and distinct population characteristics, and also describe necessary monitoring studies for each herd area.

Water developments for wild horses would provide dependable water in areas currently lacking it. These developments would ensure year-round waters and would help to distribute horses within the herd use area.

In the long term, there would be adjustments in livestock and horse numbers to achieve sustained-yield levels of use in some herd areas. This would benefit wild horses in those areas by reducing competition for forage resulting in better health and viability of the herds. No distinct qualities or traits of any herd would be lost.

Other impacts in the long term would be similar to those in the short term.

LIVESTOCK GRAZING

1. Authorized livestock grazing use would increase 7,216 animal unit months above the five-year average licensed use level within the Shoshone-Eureka Resource Area in the short term. This three percent increase is an insignificant beneficial impact.

No change in livestock use is proposed in this alternative. However, due to the management actions discussed below, the following cumulative effects of all actions in the short term are projected, in animal unit months, for each resource conflict area (These levels assume that the effects of all short-term actions are realized in the short term and that rangeland monitoring shows the vegetation to be available): North Shoshone, -79 (0.5 percent decrease), South Shoshone, 2,807 (3 percent increase), Eureka, 4,517 (4 percent increase), and Southern Valley, -29 (0.0 percent change).

Disposal of public land would effectively reduce the amount of forage available to be licensed for livestock use. A pool of 104,959 acres would be identified for potential disposal. In addition to the pool, up to 13,440 acres of agricultural lands would be available for disposal.

The effect upon available forage for livestock would be tempered by an increase in agricultural activity and private intensive livestock management within the resource area. Some of the forage lost from public land would be available as private grazing or as saleable feed.

For analysis purposes, it has been assumed that approximately 45 percent of the lands identified in the disposal pool would actually be transferred over the long term, while all of the agricultural lands would be disposed of during this period. In the worst case, disposal would result in the total loss of forage to grazing use. In the short term, loss of approximately 19,479 acres of public grazing land would result in a reduction in available animal unit months, by resource conflict area as follows: North Shoshone (84); South Shoshone (280); Eureka (907); and Southern Valley (96).

Selective harvest of 3,750 acres of woodland for firewood and fence posts during the short term would result in approximately 292 animal unit months available to be grazed by livestock, wild horses, and wildlife as a result of increased understory production following reduction of the woodland overstory. The percentage of the total available to livestock has been calculated based on the percent of the total available forage utilized by livestock in each resource conflict area. The increase in animal unit months by resource conflict area is as follows: North Shoshone (5), South Shoshone (77), Eureka (77), and Southern Valley (67).

Monitoring and adjusting livestock use (and wild horse use) to reach sustained-yield levels of use would occur in the short term as monitoring data becomes available. It is the professional judgement of the Shoshone-Eureka Resource Area staff that adjustments in grazing use would be required in resource conflict areas with declining trend. Although adjustments are expected, data is not available at this time with which to project the magnitude of grazing use or season-of-use adjustments in this plan.

Implementation of five allotment management plans and construction of projects in support of those allotment management plans would provide an increase in animal unit months in the short term. Grazing systems, an integral part of any allotment management plan, may require greater stocking rates on smaller portions of the allotment. This increased utilization in the grazed area allows the ungrazed areas to rest while providing more even utilization of the vegetation in the grazed areas. The plants in the ungrazed areas are allowed to increase vigor, storage, and reproduction which leads to increased production the following year. These positive aspects of rest outweigh the increased utilization in the grazed years (Shiflet and Heady 1971, Hickey 1971). Based on a review of grazing systems in the western states by Van Poollen and Lacey (1979) and the professional judgement of the resource area staff, it is estimated that a 10 percent increase in animal unit months would be realized through implementation of grazing systems and allotment management plans. The increases to the South Shoshone and the Eureka resource conflict areas would be 760 animal unit months and 2,047 animal unit months, respectively.

The fences and water developments required in the implementation of grazing systems and allotment management plans would have an initial insignificant impact upon livestock grazing through loss of vegetation at the project site.

The addition of 18,000 acres of vegetation manipulation, primarily crested wheatgrass seedings, as an integral part of grazing systems, would provide an additional 6,000 animal unit months in the short term as a direct result of the seeded grasses. Since 90 percent of the forage would be allocated to livestock, 5,400 animal unit months would be available for livestock grazing. The South Shoshone resource conflict area would receive an increase of 2,250 animal unit months as a result of seedings and the Eureka resource conflict area would receive a 3,150 animal unit month increase. This would benefit livestock grazing.

Maintaining wild horse grazing use levels at 43,512 animal unit months, the 1982 level, while monitoring the vegetation during the short term would continue the present relationship between livestock and wild horses in all herd areas. This would not be a significant impact.

2. Loss of livestock grazing would occur during riparian improvement.

Vegetation in riparian zones would be excluded from grazing during improvement. Approximately 840 acres would be involved. The loss from these areas would amount to 280 animal unit months which would not be significant. Once the areas were improved to good condition, they would be opened to livestock use on a restricted basis. The result would be a net increase in forage available to livestock. In the long term, an additional 1,020 acres representing 340 animal unit months would be involved. This temporary loss would not be a significant impact.

3. No adjustments to grazing use levels would occur as a result of wilderness designation.

Recommending 82,600 acres of the Antelope wilderness study area, 500 acres adjacent to the northern boundary of the Antelope area, and 15,090 acres in the Roberts wilderness study area as suitable for wilderness designation would have no effect on livestock grazing use or on the maintenance of existing livestock improvements within the study areas. Adjustments to livestock grazing use within the study areas would be determined using the same monitoring program implemented on the remainder of the resource area.

Construction of new projects within designated wilderness areas would be governed by the procedures outlined in the bureau's Wilderness Management Policy. Major types of projects such as seedings would be precluded, but most types of projects could be implemented with minor design changes to make them less obtrusive. No projects anticipated at this time would be precluded by wilderness designation.

4. Authorized livestock grazing use would increase 26,527 animal unit months above the five-year average licensed use level within the Shoshone-Eureka Resource Area in the long term. This 11 percent increase would be a significant beneficial impact.

Management actions in the long term would be similar to those in the short term. Additional land tenure adjustments, woodland harvest, allotment management plans and projects, and vegetation manipulation would all have an impact on the availability of forage for livestock use. Due to the lack of definition on the quantity, extent, and location of these actions, specific analyses cannot be conducted. The change in animal unit months expected by resource conflict area are as follows: North Shoshone -596 (4 percent decrease), South Shoshone 16,001 (18 percent increase), Eureka 10,884 (10 percent increase), and Southern Valley 238 (1 percent increase). This would be a significant beneficial impact to livestock grazing in the South Shoshone and Eureka resource conflict areas.

VEGETATION

1. Ecological condition and vegetation trend would improve in the South Shoshone and Eureka resource conflict areas and declining ecological condition would stabilize in the North Shoshone and Southern Valley resource conflict areas over the long term.

Long-term change in ecological condition and vegetation trend would be, by resource conflict area, as follows: North Shoshone (0 percent increase in condition, 12 percent improvement in trend), South Shoshone (16 percent increase in conditon, 25 percent improvement in trend), Eureka (6 percent increase in conditon, 2 percent improvement in trend), and Southern Valley (0 percent increase in condition, 3 percent improvement in trend). The increase in ecological condition is a significant beneficial impact in the South Shoshone resource conflict area. The improvement in vegetation trend is a significant beneficial impact in the North Shoshone and South Shoshone resource conflict areas. The percent change in ecological condition and vegetation trend for each resource conflict area is shown in Table 4-1.

The above noted changes in long-term condition and trend would be brought about by both short and long-term management actions. The effects of short-term actions are discussed below followed by a brief summary of expected long-term effects.

Licensing livestock use at the present level (the last five-year average, 1977-81) in the short term and adjusting grazing use through monitoring to achieve sustained-yield utilization levels would benefit ecological condition by stabilizing areas with a downward trend in all resource conflict areas. Although adjustments in grazing use or changes in season-of-use are expected, monitoring data is not available at this time with which to project the magnitude of the adjustments in this plan.

Implementation of five allotment management plans in the short term and construction of projects in support of the allotment management plans (Table 2-2) would improve ecological condition in these allotments by allowing most plants to complete growth cycles and increase carbohydrate reserves. This would benefit ecological condition and vegetation trend.

One of the main objectives of implementing allotment management plans is to increase available forage for grazing use while improving vegetation condition and trend. Condition would be enhanced by improving ground cover, species composition, plant vigor, and density (Stoddart and Smith 1955). The rate of change in condition would vary, depending upon site potential, present vegetation condition, present cover, natural seed sources, extent of range improvements and climatic conditions (Stoddart and Smith, 1955).

The physiological needs of management species would be met by implementing the proposed allotment management plans and rangeland projects. The past practice of yearlong grazing would be eliminated as grazing systems are implemented. Rest-rotation systems would (1) promote vigor and seedling success of forage species by rest and deferment, (2) promote seed planting of forage species by the mechanical action of animal movement following deferment, (3) reduce ill effects of repeated overuse of preferred areas that commonly occur with continous grazing, and (4) increase animal productivity as a consequence of increasing vegetation productivity (Hanley, 1979).

Water developments and fencing (Table 2-2) would improve the distribution of livestock. Proper distribution of livestock is essential to effective use of the range (Cook, 1967). As discussed above, uniform utilization of the range and rest during critical periods of growth reduces the ill effects on forage plants due to overgrazing and continuous year-long grazing. This would benefit ecological condition and vegetation trend.

Vegetation manipulation, primarily through establishment of seedings, would provide vegetation for grazing during the critical spring growing season. Reducing utilization levels on the native vegetation during the spring growing season would allow the vegetation to improve in condition while at the same time increase the total amount of forage available for grazing. This would benefit ecological condition and vegetation trend.

Management actions designed to meet the objectives of this alternative, in the long term would be similar to those in the short term. Additional land tenure adjustments would take place. Additional water sources and more fences would be constructed to improve livestock distribution , and an additional 10 allotment management plans would be implemented. More seedings would be developed to provide additional sources of forage as well as reduce grazing pressure on native spring range. As previously discussed, improved livestock distribution and protection of native range from overutilization and improper season-of-use would benefit ecological condition and trend. Due to the lack of definition on quantity, extent, and location of these actions, specific analyses cannot be conducted.

2. Approximately 840 acres of riparian vegetation would improve.

Studies by Dahlem (1979) and Duff (1979) have shown that significant improvement in riparian vegetation can be realized in a short time as a result of livestock exclusion. As a result of protection, 840 acres of riparian vegetation would improve and an estimated 1,070 acres currently in good condition would remain in good condition in the short term.

In the long term, an additional 960 acres of riparian vegetation would improve to good condition as a result of management actions and 1,920 acres would continue to decline. The net result would be an 11 percent increase in areas in good condition compared to the existing situation. This would be a significant beneficial impact.

CULTURAL RESOURCES

1. Wilderness designation would provide additional protection for an estimated 1,382 cultural resource sites.

Designation of 82,600 acres within the Antelope wilderness study area, 500 acres adjacent to the northern boundary of the Antelope wilderness study area, and all 15,090 acres of the Roberts wilderness study area as wilderness would provide protection for an estimated 1,382 cultural resource sites by limiting recreational vehicle access and surface-disturbing activities. Recommending 54,470 acres as nonsuitable for wilderness would not provide this extra benefit for an estimated 771 sites. See Table 4-2 for a summary of the cultural resources affected.

2. Land disposal, woodland harvest, and rangeland improvement projects would have a significant adverse impact upon cultural resource sites.

The cumulative impact of this alternative would be less than that of the economic development alternative, but greater than that of the protection alternative.

Disposal of approximately 58,440 acres over 15 years would impact an estimated 148 cultural resource sites. However, this worst-case prediction is unlikely because most of the locations recommended for disposal are in areas of lower than average probability for the occurrences of cultural resources and because standard operating procedures would eliminate from disposal any tracts containing sites eligible for the National Register of Historic Places.

Woodland harvest of 11,250 acres has the potential for impacting 159 cultural resource sites over 15 years. Because areas suitable for harvesting woodland products are also generally areas with a higher-than-average potential for cultural resources, the actual worst-case situation in these areas would be greater than indicated in Table 4-2.

Authorizing use on the basis of the last five-year average would continue impacts to cultural resources by livestock trampling at much the

Table 4-2 Worst-case Estimate of the Number of Cultural Resources That Could be Affected by the Preferred Alternative.

	Management Site Types						
	Prehistoric			Historic		Isolated Find	Total
Management Actions	Open	Rock Shelter	Rock Art	Euroamerican	Aboriginal		
Wilderness 1/							
Suitable (97,690 acres)	870	6	2	94	2	408	1,382
Unsuitable (54,470 acres)	485	4	1	52	1	228	771
Land Disposal 2/							
45,000 acres	47	0	0	9	0	58	114
13,440 acres	14	0	0	3	0	17	34
Woodland Products 1/							
11,250 acres	100	1	0	11	0	47	159
Livestock 3/							
Wells (4)	0	0	0	0	0	0	0
Spring Development (22 + 36 mi. P/L)	23	0	0	4	0	2	29
Fences (103 miles)	26	0	0	4	0	9	39
Seeding (18,000 acres) 4/	72 5/	0	0	0	0	-	72
Wild Horses 3/							
Spring Development (6)	3	0	0	0	0	0	3
Wildlife 3/							
Spring Development (8)	4	0	0	0	0	0	4
Fences (65 miles)	16	0	0	2	0	5	23
Guzzlers (8)	1	0	0	0	0	0	1
Vegetative Manipulation (1,600 acres) 4/	6	0	0	3	0	10	19
Totals	1,667	11	3	182	3	784	2,650

1/Based on resource area Class I and Class II inventories.
2/Based on resource area Class I and Class II inventories for land disposals
3/Based on resource area Class I inventories for the specific kinds of projects
4/Based on survey done in the Tonopah Resource Area
5/Open prehistoric sites cannot be separated from isolated finds.

Source: District Cultural Resource Reports
Methodology: Number of acres per miles per number inventoried divided by the number of sites recorded.

same rate as in the past. Future adjustments would proportionally increase or decrease impacts. Livestock management has been and would continue to be one of the most significant causes of detrimental impacts to cultural resources. Under a worst-case situation the improvements proposed for the short term, could potentiallly impact 140 cultural resources sites. Long-term improvements could impact cultural resources at approximately the following rates: one site for every 0.8 springs (includes pipelines), one site for every 2.7 miles of fence, and one site for every 250 acres of seeding.

Maintaining wild horse use at its present level during the short term would continue impacts on cultural resources by trampling at approximately the same rate as in the past.

Where horse use is concentrated, damage to cultural resources is generally severe. Over the long term, the amount of damage would be directly related to and in proportion with the direction and extent of adjustments in wild horse use. Development of 6 springs during the short term for wild horse use would potentially impact 3 cultural resource sites. Long term impacts would be one cultural resource for every 1.5 springs developed.

Proposed wildlife management developments would impact an estimated 47 cultural resources in the short term. Long-term impacts would be approximately at the rate of one site per 1.5 spring developments, one site for every 2.8 miles of fence, one site for every 10 guzzlers, and one site per 84 acres of vegetation manipulation.

VISUAL RESOURCES

1. Wilderness designation would extend additional protection to the visual resource on 98,190 acres.

Designation of 82,600 acres within the Antelope wilderness study area, 500 acres adjacent to the northern boundary of the Antelope wilderness study area, and all 15,090 acres of the Roberts wilderness study area as wilderness would extend extra protection to the visual resource within these areas. This would benefit the Roberts area, as wilderness designation would help to mitigate the expected impacts upon the visual resource from mineral exploration and development. It would not benefit the Antelope area as very little development activity is expected during the long term.

2. Utility corridor designation and identification would benefit visual resources.

Assuming that the same number of projects would be developed in the long term with or without corridors, the establishment of corridors would benefit the visual resource. On a resource area-wide basis, the grouping of utility lines into corridors would result in fewer adverse visual effects than not grouping them into corridors.

This action would help maintain existing visual quality. The adverse effects of transmission lines would be concentrated by placing them proximate to each other in locations that avoid class II visual resource management areas. Areas outside of the corridors would be protected from the adverse visual effects associated with major utility lines.

Locating corridors to avoid the visual resource management Class II areas (The Narrows, and Devil's Gate) and the Hickison Summit Recreation site would help maintain the scenic quality of these areas over the long term.

3. Concentration of utility lines within corridors would have an insignificant adverse effect upon the visual resource within the corridors.

Consolidation of lines along corridors would result in a greater adverse visual effect within the corridor itself that if lines were constructed along separate routes. However, as all lines would be constructed consistent with appropriate visual resource management class guidelines, the overall impact would not be significant.

WILDERNESS

1. Wilderness designation would protect wilderness values on 98,190 acres.

Designation of 82,600 acres of the Antelope wilderness study area, 500 acres adjacent to the northern boundary of the Antelope wilderness study area, and 15,090 acres of the Roberts wilderness study area as wilderness would protect wilderness values over the long term. This action would have a significant beneficial impact upon wilderness values. A description of the wilderness values within these areas is contained in Chapter 3.

Wilderness designation of 500 acres adjacent to the northern boundary of the Antelope wilderness study area would enhance the manageability of the area as wilderness by providing a more recognizable boundary. Both the Roberts and the Antelope areas are considered to be manageable as wilderness over the long term. For a discussion of the manageability of each area refer to the wilderness section of Chapter 3.

Designation of these areas would help balance the ecosystem diversity of the National Wilderness Preservation System, but the importance of this is reduced by the fact that there are other areas either already designated or under consideration for wilderness that are classified as being within this ecosystem.

2. Wilderness values would not be protected on 54,470 acres.

Recommending 49,670 acres of the Simpson Park wilderness study area and 4,800 acres of the Antelope wilderness study area as nonsuitable for wilderness designation would result in the loss of wilderness values in the short term in the northern half of the Simpson Park wilderness study area due to potential development of mining claims present in the area and known deposits of barite. This would be a significant adverse impact upon wilderness values. The southern half of the Simpson Park wilderness study area and the 4,800 acres in the Antelope wilderness study area would retain their wilderness character in the long term. A description of the wilderness values within these areas is contained in Chapter 3.

3. Woodland harvest actions would not impact wilderness values.

Woodland product management would not impact those areas recommended as nonsuitable over the long term as more accessible areas would be available to satisfy all projected demands.

4. Rangeland management actions would benefit wilderness values.

Monitoring and adjusting livestock and wild horse use would match grazing use with capacity and benefit wilderness values by enhancing the naturalness of the vegetation.

Re-introduction of Lahontan cutthroat trout into Pete Hansen Creek would enhance wilderness values by restoring a native species to its historic habitat thus enhancing the naturalness of the Roberts wilderness study area.

Managing big game habitat to provide adequate vegetation to support reasonable numbers of mule deer in each big game use area would benefit wilderness values as it would help restore a valuable component of the ecosystem to its long-term average population.

RECREATION

1. Wilderness designation would not have a significant impact upon existing recreation use.

Wilderness designation of 82,600 acres within the Antelope wilderness study area, 500 acres adjacent to the northern boundary of the Antelope wilderness study area, and the entire 15,090 acres within the Roberts wilderness study area would not have a significant impact upon existing recreation use. Deer hunting is the primary recreational use of these areas. Much of this motorized vehicle use takes place on existing cherry-stemmed roads which would remain open after wilderness designation. Recreation use on a total of 9 miles of primitive vehicle ways within the Antelope area and on 2.5 miles within the Roberts area would be prohibited.

2. Outstanding opportunities for primitive recreation would be protected in some areas and lost in others.

Existing outstanding opportunities for primitive recreation would be maintained within the Antelope and Roberts wilderness study areas. Primitive recreation opportunities in the northern half of the Simpson Park wilderness study area would be lost during the short term as a result of expected mineral exploration. Existing opportunities for recreation would continue in the southern half of the area over the long term as no development is expected. Refer to the wilderness section of Chapter 3 for a description of these opportunities.

3. Primitive recreation use would not increase significantly.

Wilderness designation would generate an insignificant increase in non-motorized recreation use. It is expected that use of the Roberts area would increase by 2,400 visitors hours per year, while use in the Antelope area would increase by 1,200 visitor hours (Professonal judgement, Battle Mountain District Wilderness Specialist).

4. Big game hunting would increase significantly.

In the short term, total hunter days would increase an estimated 9 percent above present use as game populations increase through wildlife habitat improvement. In the long term, hunter days would increase approximately 33 percent above present use based on big game populations achieving reasonable numbers. Table 4-1 shows the number of hunter days estimated under this alternative.

MINERAL EXPLORATION AND DEVELOPMENT

General Impacts

Wilderness designation which would withdraw areas from appropriation under the mining laws (on the date of establishment or December 31, 1983, whichever is later, unless otherwise provided for in the enacting legislation), would have an adverse impact on the availability of, the exploration for, and the development of any potential mineral deposits which had not yet been discovered. Generally, the higher the potential for the occurrence of the various minerals, as discussed in Chapter 3, the greater the potential adverse impact. Additionally, the ability of industry to develop any deposits which had already been discovered but had not yet developed would also be adversely impacted due to the increased cost of meeting more restrictive and stringent regulations, primarily in the standards of reclamation and rehabilitation (See BLM Wilderness Management Policy, pages 26-27). Because of the uncertainties associated with mineral exploration and development within wilderness areas, individuals and companies would be reluctant to initiate or continue activities.

After wilderness designation, all claims must have a valid discovery before any activity would be allowed to occur. A bureau minerals specialist would conduct a validity exam to determine the claim´s validity before any operations would be approved.

Specific Impacts

1. Wilderness designation of all 15,090 acres of the Roberts and 82,600 acres within the Antelope wilderness study areas plus 500 acres adjacent to the Antelope area would have a significant adverse impact upon the ability of the minerals industry to explore for and develop potential mineral deposits in these areas.

2. Not designating any of the 49,670 acre Simpson Park wilderness study area as wilderness would have a significant beneficial impact upon the ability of the minerals industry to develop known deposits of barite and to explore for and develop other potential mineral deposits in the area.

For numbers 1 and 2 above, the degree of impact upon known and potential mineral exploration and development opportunities varies by mineral type. For a description of the known mineral values and mineral potentials involved, refer to the Mineral Exploration and Development Section of Chapter 3.

ENERGY AND UTILITIES

1. Designation of utility corridors would significantly benefit utility companies.

Designation of utility corridors would help utility companies plan for future rights-of-way and would expedite the approval process.

The proposed network of corridors would satisfy all expected needs for transmission facilities during the life of the plan.

2. 45,000 cords of fuelwood would be available to the local population as an alternate energy source.

Harvest of 45,000 cords of pinyon-juniper fuelwood over the 15 year implementation period would supply the local population with an alternate energy source equivalent of 6,237,000 gallons of fuel oil.

ECONOMIC IMPACTS

1. No significant impact to the area economy would occur as a result of wilderness designation.

Economic interest in the wilderness study areas derives from their use for grazing, recreation, forest products, mineral production, and tax revenues. Analysis of these productive uses of the potential wilderness resource indicates that no significant alteration of the area economy would be expected to occur due to formal wilderness designations. While there would be some minor trade offs in income and employment impacts, with particular activities such as recreation being enhanced and mineral extraction being discouraged, the basic structure of the economy will remain intact, with no significant impacts, either beneficial or adverse.

2. The disposal of 45,000 acres of public land would not significantly alter the tax base of Lander and Eureka counties.

The successful disposal of 45,000 acres of public land over a 15-year period would alter the tax base of Lander and Eureka counties, but not to a significant degree. Based on estimated fair market value applied to potential highest and best use, these lands are valued at $11,076,375. Assuming assessed valuation at 35 percent of full cash value, these lands would add $3.9 million, or approximately 4 percent, to the total assessed valuation ($91.7 million) of the two counties.

3. Harvest of woodland products would have an insignificant beneficial impact on the area economy.

Based on permit fees and fair market value estimates, the preferred alternative would provide $41,100 in revenues to the bureau, and a value to the consumer of $607,200. These figures represent increases of $19,275 and $290,139, respectively, over current use. The increased harvest would benefit individual consumers but values would not be significant to the area economy.

4. Increased hunter days would be an insignificant benefit to the area economy.

Hunter days (see Table 4-1) would increase to 18,200 in the short term and 21,900 in the long term. Expenditures associated with these hunting activities would total $423,220 and $510,792 providing income to the area economy estimated at $125,273 and $151,194. This represents an increase over current use of $39,182 in expenditures and $11,598 in income in the short term, and 126,754 in expenditures and $37,519 in income in the long term. The economic impact of the preferred alternative would not be significant at the resource area level.

5. Licensing livestock grazing use at 11 percent above the five-year average licensed use would have a significant beneficial impact on ranch income, livestock industry employment, and area economy employment.

Total resource area ranch income is estimated at $5,018,772. Long-term cumulative effects of this alternative result in significant beneficial impacts to resource area net ranch income, livestock industry employment, and area economy employment. Net ranch income for the resource area would increase by 5 percent to $5,268,379 which would result in an addditional 18.4 jobs in the livestock industry and 33.4 additional jobs in the area economy as the multiplier effect of spending and income takes hold.

Ranch operations in the North Shoshone resource conflict area would experience a reduction in net income during the long term. Over the long term, livestock forage reductions would be approximately 3.6 percent of five-year average licensed use within this resource conflict area. Individual ranchers would not be significantly impacted.

Tables 4-3 and 4-4 display economic impacts by resource conflict area.

SOCIAL IMPACTS

1. No significant change (except for minerals) in local resident access to public land resources would occur.

Public land as a portion of the resource area land base would decrease from approximately 91.5 percent to 90.2 percent. The size of the reduction from land disposal is not sufficient to alter the present supply-demand relationship. Livestock permittees would continue to have access to public grazing lands, except where public land is transferred to other ownership. In this case, disposal of public land would effectively reduce the amount of forage available to be licensed for livestock use.

Wilderness designation would not reduce the availability of woodland products as the productive capacity of the harvest base far exceeds demand. Wilderness designation restricts mineral exploration and development opportunities in several areas with moderate mineral potential, but no operations are presently dependent upon these areas. Refer to the minerals section for more information about these potential impacts. Livestock grazing opportunities would not be affected by wilderness designation. Present recreation use would not be significantly altered as a result of wilderness designation.

2. The management actions proposed would not affect public safety or the viability of local organizations.

No change from the existing situation is expected as a result of the management actions proposed.

Table 4-3 Economic Impacts to Livestock Grazing under the Preferred Alternative (short term)

Resource Conflict Area	Animal unit months (+-)	Change[1/] in gross Sales ($)	Change in Net Income ($)	Change in Livestock Industry Employment (FTE)[2/]	Change in Area Economy Income ($)	Change in Area Economy Employment (FTE)
North Shoshone	-79	-1,795	-745	-0.06	-1,566	-0.1
South Shoshone	+2,807	63,765	26,410	2.0	55,518	3.6
Eureka	+4,517	102,611	42,500	3.2	89,340	5.8
Southern Valley	-29	-659	-273	-0.02	-573	-0.3
Resource Area Total	+7,216	163,922	67,892	5.12	142,719	9.0

[1/] change from existing situation
[2/] FTE: Full Time Equivalent (2,000 hours)

Source: Professional judgement, Regional Economist

Table 4-4 Economic Impacts to Livestock Grazing under the Preferred Alternative (long term)

Resource Conflict Area	Animal unit months (+-)	Change1/ in gross Sales ($)	Change in Net Income ($)	Change in Livestock Industry Employment (FTE)2/	Change in Area Economy Income ($)	Change in Area Economy Employment (FTE)
North Shoshone	-596	-13,540	-5,607	-0.4	-11,787	-0.75
South Shoshone	16,001	363,489	150,566	11.0	316,483	20.0
Eureka	10,884	247,248	102,409	7.6	215,274	13.8
Southern Valley	238	5,406	2,239	0.2	4,707	0.3
Resource Area Total	26,527	602,603	249,607	18.4	524.677	33.35

1/ change from existing situation
2/ FTE: Full Time Equivalent (2,000 hours)

Source: Professional judgement, Regional Economist

RESOURCE PROTECTION ALTERNATIVE IMPACTS

LAND OWNERSHIP

The environmental consequences of this alternative are summarized in Table 4-5 by resource conflict area.

1. An estimated 17,640 acres of public land would be transfered to other ownership.

Based upon professional judgement, identification of a 27,929-acre pool of lands would result in the estimated disposal of approximately 4,200 acres over a 15 year period. This disposal would result in the following percentage changes in land tenure within the resource area. Public land would decrease from 91.5 percent to 91.4 percent. Private land would increase from 8.5 percent to 8.6 percent.

Disposal would meet some community expansion needs, eliminate some isolated parcels, but would not be geared toward industrial development.

Disposal would result in the transfer to private ownership, within 15 years, of up to 13,440 acres (not included in the disposal pool) of public land suitable for agriculture. This represents a 0.3 percent reduction in the number of acres of public lands within the resource area.

WOODLANDS

1. The resource area´s harvest base would be reduced.

Wilderness designation would reduce the woodland harvest base by a total of 10,800 acres. This 1.8 percent reduction exceeds the 1 percent threshold of significance. The reduction would have no effect upon the capability of the public lands to meet the expected demand for woodland products. Wilderness designation of the entire Simpson Park, Roberts, and Antelope wilderness study areas would result in 2,500 acres of potentially-manageable woodland in the Simpson Park unit, 1,300 acres of potentially-manageable woodland in the Roberts unit, and 7,000 acres of potentially-manageable woodland in the Antelope unit being withdrawn from management for woodland products.

2. Trend of stand condition would improve on 6,750 acres of pinyon-juniper woodland.

Selective harvest of pinyon-juniper woodland for woodland products would improve overall forest productivity, stand health, and vigor on approximately 6,750 acres over the 15-year implementation period. This represents harvest on slightly more than 1 percent of the total management base over the implementation period.

3. Public demand for wood products would not be met.

Approximately 2,000 cords of fuelwood, 6,000 juniper posts, 2,100 Christmas trees and 10,000 pounds of pine nuts would be harvested annually. This harvest rate would not adequately meet public demand for woodland products and constitutes a significant adverse impact.

WILDLIFE HABITAT

1. Terrestrial wildlife habitat would generally improve.

The deferment of spring use would reduce competition on spring and summer ranges for succulent forage.

Table 4-5 Impacts of the Resource Protection Alternative by Resource Conflict Area

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA[1]	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
LAND OWNERSHIP					
Acres disposed	2,622	1,621	7,983	5,414	17,640(0.4%)[3]
WOODLANDS					
Acres harvested	2,312	65	2,312	2,061	6,750(1%)[4]
Acres of harvest base removed	0	0	10,800	0	10,800(2%)[4](SA)[5]
Availability of woodland products	Public demand for woodland products would be met.				
WILDLIFE					
Riparian habitat condition[2] (acres) projected long term					
Poor	140	40	440	70	690(-23%)[6](SB)
Fair	60	110	730	110	1,010(+7%)
Good	590	220	1,780	270	2,860(+16%)(SB)
Aquatic habitat condition[2] (miles of stream) projected long term					
Poor	16.7	8.7	13.1	6.6	45.1(-1%)[6]
Fair	2.4	3.3	15.7	4.8	26.2(-40%)
Good	29.5	12.0	35.2	11.0	87.7(+41%)(SB)
Reasonable numbers	Animal unit months for reasonable numbers of big game animals (mule deer and pronghorn antelope) would be available in both the short and long term. (+33%)[6] (SB)				
WILD HORSES					
Number of animals short term	2,320(SB)	0	1,675(SB)	305(SB)	4,300 (SB)
LIVESTOCK GRAZING					
Availability of forage (animal unit months)					
current use/ 5-year average licensed use	89,836	16,355	107,942	26,241	239,317
projected short term	75,990	11,228	91,205	24,198	202,621(-15%)(SA)
projected long term	86,844	11,125	84,978	24,154	217,101 (-9%)
VEGETATION					
Long-term change[6] in ecologicl condition(%)	+18(SB)	+20(SB)	+18(SB)	+23(SB)	+19
Long-term change[6] in vegetation trend (%)	+25(SB)	+22(SB)	+16(5B)	+15(5B)	+16
Riparian vegetation condition[7]					

Table 4-5 Impacts of the Resource Protection Alternative by Resource Conflict Area (Continued)

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA 1/	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
CULTURAL RESOURCES					
Potential sites protected	0	0	2,154	0	2,154
Potential sites disturbed					309(SA)
WILDERNESS					
Acres protected	N/A	N/A	152,160(SB)	N/A	152,160 8/
Acres not protected	N/A	N/A	0	N/A	0
RECREATION					
Hunter days					
short term					21,900(+25%)(SB)
long term					21,900(+25%)(SB)
Primitive vehicle ways closed (miles)	0	0	49	0	49
MINERAL EXPLORATION AND DEVELOPMENT					
Acres restricted due to wilderness recommendations	0	0	152,160(SA)	0	152,160
ENERGY AND UTILITIES					
Bulk transfer of energy	The proposed network of corridors would satisfy all expected needs for transmission facilities during the life of the plan. (SB)				

Source: Shoshone-Eureka planning team estimates

1/ resource conflict area
2/ Threshold is good or better condition. Some areas included in good condition class may actually be in excellent condition.
3/ Portion of total public land (4.3 million acres) within the resource area
4/ Portion of total woodland harvest base (600,000 acres)
5/ SB = significant beneficial impact
SA = significant adverse impact
6/ Percent change from existing situation
7/ Values for riparian vegetation condition are the same as those for riparian habitat condition in the wildlife section.
8/ The Simpson Park wilderness study area would be recommended as suitable for wilderness designation, but is not considered to be manageable as wilderness over the long term.

The deferment would be an overall benefit to wildlife habitat by reducing utilization of plants during the critical growing season. This would benefit deer and pronghorn antelope as they would have access to this forage at a critical time during the year. Impacts of allotment management plans and range improvement projects would be the same as those under the preferred alternative.

Impacts of wildlife habitat improvment projects would be the same as those under the preferred alternative but of greater magnitude due to the increased number of projects under this alternative.

Impacts from increases in wild horse numbers would be offset by an overall 18 percent reduction in livestock use under this alternative. Wildlife habitat in the herd use areas receiving activity plans, i.e. allotment management plans or herd management area plans, would improve, however the extent of improvement cannot be estimated at this time.

Wilderness designation of 152,160 acres in three wilderness study areas would benefit wildlife habitat through the overall resource protection such designation would provide.

2. Wildlife habitat on areas not receiving activity plans would remain in current condition.

Impacts would be the same as those under the preferred alternative.

3. Approximately 1,520 acres of riparian habitat would improve while unprotected riparian habitat would remain static or decline.

Impacts would be the same on 840 acres as under the preferred alternative. An additional 680 acres of habitat would improve and approximately 1,080 acres would be maintained in good condition in the short term. Impacts in the long term would be the same as those under the preferred alternative. An additional 720 acres would improve to good condition and 1,700 acres would remain in less than good condition or continue to decline.

Short and long term actions would result in a 16 percent increase in areas in good condition compared to the existing situation, a significant beneficial impact. Table 4-5 shows projected riparian habitat condition by resource conflict area.

4. Reasonable numbers of big game would be achieved in the short term.

It is expected that due to livestock use reduction, spring use deferment, range and wildlife habitat improvement projects, and activity plan implementation, big game populations would increase to reasonable number levels by the end of the short term. This would be a significant beneficial impact. That number would be maintained in the long term.

5. Sixty-four miles of protected aquatic habitat would improve, while unprotected aquatic habitat would remain static or decline.

Impacts would be the same on 36 miles of stream as under the preferred alternative. Twenty-eight additional miles of stream would be improved including 10 miles of stream identified as historic Lahontan cutthroat trout habitat and proposed for restocking by the Nevada Department of Wildlife (Coffin, 1982). Long-term impacts would be the same as those under the preferred alternative. Approximately 71 miles of streams would remain in less than good condition or continue to decline. Areas in good condition would increase by 41 percent compared to the existing situation, a significant beneficial impact. Table 4-5 shows aquatic habitat condition by resource conflict area.

WILD HORSES

1. Total population of wild horses within the resource area would increase.

Under this alternative wild horse numbers would increase by approximately 18 percent from 3,660 to 4,300. Forage demand would increase from 43,512 animal unit months to 51,180 animal unit months. Changes in herd populations within each resource conflict area are as follows: South Shoshone, increase from 2,033 to 2,320; Eureka, increase from 1,347 to 1,675; and Southern Valley, increase from 280 to 305. The increase in numbers would promote the general well-being of the various herds, promote their long-term survival, and be a significant beneficial impact.

Impacts from implementation of herd management area plans would be the same as those under the preferred alternative for both the short term and long term but would not be a significant impact. Water developments and seedings would benefit wild horses.

There would be no significant impacts to wild horses from any wildlife habitat management actions in the short term or long term.

In the short term, the reduction of overall livestock use would benefit wild horses in all herd use areas where this reduction would take place. Less livestock would reduce competition between wild horses and livestock by reducing total forage utilization. Effects associated with range improvements would be the same as those in the preferred alternative but on a smaller scale as there would be fewer projects.

In the long term, there would be adjustments in livestock and wild horse numbers to achieve sustained-yield levels of use in the herd areas. Impacts as a result of such adjustments would be the same as those under the preferred alternative.

LIVESTOCK GRAZING

1. Livestock grazing use would decrease 36,396 animal unit months below the five-year average licensed use level of 239,317, to 202,921 animal unit months within the Shoshone-Eureka Resource Area in the short term. This 15 percent decrease is a significant adverse impact.

No change in livestock use is proposed in this alternative. However, due to the management actions discussed below, the following cumulative effect of all management actions in this alternative in the short term would reduce the five-year average licensed use level of 239,317 animal unit months by 36,696 to a level of 202,621 animal unit months. The above resource area-wide reduction, shown by resource conflict area, is as follows: North Shoshone, 5,127 (31 percent decrease). South Shoshone 13,846 (15 percent decrease), Eureka 16,737 (16 percent decrease), and Southern Valley, 986 (4 percent decrease). This is a significant adverse impact on livestock grazing in the North Shoshone, South Shoshone, and Eureka resource conflict areas.

Disposal of public land would effectively reduce the amount of forage available to be licensed for livestock use. The effects would be the same as under the preferred alternative except of a lower magnitude as the expected loss of acreage is only 5,880 acres in the short term. The loss of animal unit months, by resource conflict area, is as follows: North Shoshone (57), South Shoshone (88), Eureka (226), and Southern Valley (95). This would be an adverse effect upon livestock grazing.

Selective harvest of 2,250 acres of woodland for firewood and fence posts during the short term would result in an additional 176 animal unit months available to be grazed by livestock, wild horses, and wildlife as a result of increased understory production following reduction of the woodland overstory. The increase in animal unit months by resource conflict area is as follows: North Shoshone (2), South Shoshone (41), Eureka (41), and Southern Valley (38). This would benefit livestock grazing.

Initially licensing livestock use at 197,413 animal unit months and implementing grazing treatments (Appendix A) which would suspend livestock grazing on spring ranges would be a significant adverse impact to livestock grazing. Reductions in grazing use by resource conflict area are shown as follows: North Shoshone 5,071 (31 percent decrease), South Shoshone 16,191 (18 percent decrease), Eureka 19,730 (18 percent decrease), and Southern Valley 912 (4 percent decrease).

The impacts of implementing five allotment management plans and construction of projects in support of these plans would be the same as under the preferred alternative. The increases to the South Shoshone and Eureka resource conflict areas would be 760 and 2,047 animal unit months, respectively.

The impacts of vegetation manipulation would be the same as under the preferred alternative except of a lower magnitude as only 9,000 acres of vegetation manipulation would be implemented. As a direct result of the seeded grasses, 2,700 animal unit months would be available for livestock grazing. The South Shoshone resource conflict area would receive 1,650 animal unit months as a result of seedings and the Eureka resource conflict area would receive 1,050 animal unit months.

2. Loss of livestock grazing would occur during riparian improvement.

Impacts would be the same as under the preferred alternative except of a larger magnitude as 1,300 acres would be excluded during riparian improvement. The temporary loss from these areas would amount to 430 animal unit months which would not be significant.

In the long term, an additional 1,160 acres representing 390 animal unit months would be improved. This temporary loss would not be a significant impact.

3. No adjustments to grazing use levels would occur as a result of wilderness designation.

Impacts would be the same as under the preferred alternative except that a larger area would be influenced by the Wilderness Management Policy as all three wilderness study areas would be recommended as suitable for wilderness designation.

4. Livestock grazing use would decrease 22,216 animal unit months below the five-year average licensed use level within the Shoshone-Eureka Resource Area in the long term. This 9 percent decrease would be an insignificant adverse impact.

The cumulative effect of all management actions in this alternative in the long term would reduce the five-year licensed use level of 239,317 animal unit months by 22,216 to a level of 217,101 animal unit months. Management actions in the long term would be similar to those in the short term. Analysis of the impacts of these actions is the same as under the preferred alternative. The change in animal unit months expected by resource conflict area is as follows: North Shoshone 5,230 (32 percent decrease), South Shoshone 2,992 (3 percent reduction), Eureka 12,964 (12 percent reduction), and Southern Valley 1,030 (4 percent decrease). This would be a significant adverse impact to livestock grazing in the North Shoshone and Eureka resource conflict areas and an insignificant adverse impact in the resource area as a whole.

VEGETATION

1. Ecological condition and vegetation trend would improve in all four resource conflict areas.

Long-term improvement in ecological condition and vegetation trend, as a result of the management actions discussed below, by resource conflict area would be as follows: North Shoshone (20 percent improvement in condition, 22 percent improvement in trend), South Shoshone (18 percent improvement in condition, 25 percent improvement in trend), Eureka (18 percent improvement in condition, 16 percent improvement in trend), and Southern Valley (23 percent increase in condition, 15 percent improvement in trend). The improvement in ecological condition and vegetation trend is a significant beneficial impact in all resource conflict areas. The percent change in ecological condition and vegetation trend for each resource conflict area is shown in Table 4-5.

The above noted changes in long-term condition and trend would be brought about by both short and long-term management actions. The impacts of short-term actions are discussed below, followed by a brief summary of expected long-term impacts.

Initially licensing livestock use at 197,413 animal unit months, through implementation of grazing treatments (Appendix A), would suspend livestock grazing on spring ranges.

The delay in grazing would allow management species the opportunity to flower and build up carbohydrate reserves before being weakened by grazing (Blaisdell and Pechanec, 1949; Britton, et. al. 1979). Later turnout dates would meet the physiological requirements of management species by providing the rest and uninhibited growth required to increase growth, vigor, and seedling establishment, thereby improving ecological condition and vegetation trend. This would have a significant beneficial impact on ecological condition and vegetation trend.

The impacts of implementing five allotment management plans and construction of projects in support of these plans would be the same as under the preferred alternative.

The impacts of vegetation manipulation would be the same as under the preferred alternative except of a lower magnitude as only 9,000 acres of vegetation manipulation would be implemented.

The impacts of monitoring and adjusting grazing use to achieve sustained-yield levels of use would be the same as under the preferred alternative.

The impacts of the management actions designed to meet the objectives of this alternative, in the long term, would be the same as under the preferred alternative.

2. Approximately 1,520 acres of riparian vegetation would improve while unprotected riparian vegetation would remain static or decline.

Impacts would be the same on 840 acres as under the preferred alternative. An additional 680 acres of riparian vegetation would improve and approximately 1,080 acres would be maintained in good condition in the short term.

Impacts in the long term would be the same as those under the preferred alternative. An additional 720 acres would improve to good condition and 1,700 acres would remain in less than good condition or continue to decline.

CULTURAL RESOURCES

1. Wilderness designation of 152,160 acres would provide protection for an estimated 2,154 cultural resource sites by limiting recreational vehicle access and surface-disturbing activities (see Table 4-6).

2. Land disposal, woodland harvest, and rangeland improvement projects would have a significant adverse impact upon cultural resource sites.

The cumulative impact of this alternative would be less than that of the other alternatives.

Disposal of 17,640 acres over 15 years could impact an estimated 44 cultural resource sites. However, this worst-case prediction is unlikely because most of the locations recommended for disposal are in areas of lower-than-average probability for the occurrence of cultural resources and because standard operating procedures would eliminate from disposal any tract containing sites eligible for the National Register of Historic Places.

Harvest of 6,750 acres of woodlands over the long term has the potential for impacting 95 cultural resources. Because areas suitable for harvest of woodland products are also generally areas with a higher-than-average potential for cultural resources, the actual worst-case situation would be greater than indicated in Table 4-6.

Authorizing livestock use at 197,413 animal unit months would reduce the severity of impacts to cultural resources by livestock trampling. Future adjustments would proportionally increase or decrease impacts.

Table 4-6 Worst-case Estimate of the Number of Cultural Resources That Could be Affected by the Protection Alternative.

	Management Site Types						
	Prehistoric			Historic			
Management Actions	Open	Rock Shelter	Rock Art	Euroamerican	Aboriginal	Isolated Find	Total
Wilderness 1/							
Suitable (152,160 acres)	1,355	10	3	146	3	637	2,154
Land Disposal 2/							
4,200 acres	4	0	0	1	0	5	10
13,440 acres	14	0	0	3	0	17	34
Woodland Products 1/							
6,750 acres	59	0	0	7	0	29	95
Livestock 3/							
Wells (4)	0	0	0	0	0	0	0
Spring Development (15 + 18 mi. P/L)	14	0	0	2	0	1	17
Fences (70 miles)	18	0	0	3	0	6	27
Seeding (9,000 acres) 4/	36 5/	0	0	0	0	-	36
Wild Horses 3/							
Spring Development (8)	5	0	0	0	0	0	5
Wildlife 3/							
Spring Development(6)	3	0	0	0	0	0	3
Fences (122 miles)	31	0	0	5	0	10	46
Guzzlers (6)	1	0	0	0	0	0	1
Vegetative Manipulation (3,000 acres) 4/	12	0	0	6	0	17	35
Total	1,552	10	3	173	3	722	2,463

1/ Based on resource area Class I and Class II inventories.
2/ Based on resource area Class I and Class II inventories for land disposals
3/ Based on resource area Class I inventories for the specific kinds of projects
4/ Based on survey done in the Tonopah Resource Area
5/ Open prehistoric sites cannot be separated from isolated finds.

Source: District Cultural Resource Reports
Methodology: Number of acres per miles per number inventoried divided by the number of sites recorded.

Under a worst-case situation the improvements proposed for the short term, would potentially impact 80 cultural resources sites. Long-term improvements would impact cultural resources at approximately the following rates: one site for every 0.8 springs (includes pipelines), one site for every 2.7 miles of fence, and one site for every 250 acres of seeding.

Increasing wild horse use would increase impacts to cultural resources by trampling. Where horse use is concentrated, damage to cultural resources is generally severe. Over the long term, the amount of damage would be directly related to and in proportion with the direction and extent of adjustments in wild horse use. Development of 8 springs during the short term for wild horse use would potentially impact 5 cultural resource sites. The long-term impacts would be one cultural resource for every 1.5 springs developed.

Proposed wildlife management developments would impact an estimated 85 cultural resources in the short term. Long-term impacts would be at approximately the rate of one site per 1.5 spring developments, one site for every 2.8 miles of fence, one site for every 10 guzzlers, and one site per 84 acres of vegetative manipulation.

VISUAL RESOURCES

1. Wilderness designation would extend additional protection to the visual resource on 152,160 acres.

Wilderness designation for all three wilderness study areas, a total of 152,160 acres, would extend extra protection to the visual resource within these areas. This would benefit the Roberts area and the northern half of the Simpson Park area as wilderness designation would help to mitigate the expected impacts upon the visual resource from mineral exploration and development. There would not be a significant benefit to the southern half of the Simpson Park area and the Antelope area as very little development is expected.

2. Utility corridor designation and identification would benefit visual resources.

Limiting new transmission lines to a network of corridors established along existing lines would benefit the visual resource as it would preclude construction of utility lines in areas where there are none at the present time. On a resource area-wide basis, the grouping of utility lines into corridors would result in fewer adverse impacts than not grouping them into corridors assuming that the same number of projects would be constructed.

3. Concentration of utility lines within corridors would have an insignificant adverse effect upon the visual resource within the corridors.

Consolidation of lines within corridors would result in a greater adverse visual impact within the corridor itself than if lines were constructed along separate routes. However, as all lines would be constructed consistent with appropriate visual resource management class guidelines, the overall impact would not be significant.

WILDERNESS

1. Wilderness designation would protect wilderness values on 102,490 acres.

Wilderness designation of 102,490 acres, the entire Roberts and Antelope wilderness study areas, would have a significant beneficial impact upon the wilderness resource. A description of the wilderness values that would be protected within these areas is contained in Chapter 3. Designation of these wilderness study areas would help balance the ecosystem diversity of the National Wilderness Preservation System. As there are other areas either already designated or under consideration for wilderness classified within the same ecosystem, this would not be an important benefit.

The Roberts area is considered to be manageable as wilderness over the long term. For a discussion of the manageability of each area refer to the Wilderness Section of Chapter 3.

Wilderness designation for most of the acres within the Antelope area would not involve difficult manageability problems. The only exception to this involves a 4,800-acre parcel in an unnatural condition (see the Wilderness Section of Chapter 3). This 4,800-acre area includes numerous vehicle ways and a portion of a livestock seeding which were overlooked during the wilderness inventory. Future management of this 4,800-acre area as wilderness would be difficult.

2. Wilderness designation would not protect wilderness values on 49,670 acres.

The Simpson Park wilderness study area could not be managed as wilderness over the long term. Wilderness designation of the Simpson Park area would pose difficult management problems. Because of a combination of unrecognizable boundaries, that follow mid-slope topographical lines, and numerous ways within the wilderness area, unauthorized motor vehicle use would not be preventable. In the northern section of the unit, past mineral exploration has revealed outcrops of barite ore. It is expected that these mining claims would prove to be valid and that mining activity would take place after wilderness designation. Rehabilitation requirements in this dry, steep area would be extensive. The wilderness character of the area may return, but only after a long span of years.

3. Rangeland management actions would benefit wilderness values.

Monitoring and adjusting livestock and wild horse use would match grazing use with capacity and have a beneficial impact on wilderness values by enhancing the naturalness of the vegetation.

Re-introduction of Lahontan cutthroat trout into Pete Hansen Creek would have a beneficial impact upon wilderness values by restoring a native species to its historic habitat thus enhancing the naturalness of the Roberts wilderness study area.

Managing big game habitat to provide adequate vegetation to support reasonable numbers of mule deer in each big game use area would be a positive impact on wilderness values as it could help restore a valuable component of the ecosystem to its long-term average population.

RECREATION

1. Wilderness designation would not have a significant impact upon existing recreation use.

Wilderness designation of all three wilderness study areas, a total of 152,160 acres, would close these areas to recreational motorized use. This would not have a significant impact upon existing recreation use. Deer hunting is the primary recreational use of these areas. This motorized use takes place on existing cherry-stemmed roads which would remain open after wilderness designation. Recreation use on a total of 16.5 miles of primitive vehicle ways within the Antelope area, 2.5 miles within the Roberts area and 30 miles within the Simpson Park area would be prohibited.

2. Outstanding opportunities for primitive recreation would be protected in some areas and lost in others.

Existing outstanding opportunities for primitive recreation would be maintained within the Antelope and Roberts areas. Some of these opportunities could not be maintained in the Simpson Park wilderness study area because the bureau would not be able to manage it as wilderness over the long term. Refer to the Wilderness Section of Chapter 3 for a discussion of these opportunities.

3. Primitive recreation use would not increase significantly.

Wilderness designation would generate an insignificant increase in new non-motorized recreation use. It is expected that the use of the Roberts, Antelope, and Simpson Park areas would increase by 2,400, 1,200, and 900 visitor hours per year, respectively (Professional judgement, Battle Mountain District Wilderness Specialist).

4. Hunting use would increase significantly.

In the short term, total hunter days would increase approximately 33 percent above present use as game populations increase as a result of wildlife habitat improvement and livestock management. This level of hunter use would be maintained in the long term. Table 4-5 shows the number of hunter days estimated under this alternative.

MINERAL EXPLORATION AND DEVELOPMENT

General Impacts

The general impacts of wilderness designation would be the same for this alternative as under the preferred alternative, except that a larger number of acres would be involved.

Specific Impacts

1. Wilderness designation of all 15,090 acres within the Roberts wilderness study area, and all 87,400 acres within the Antelope wilderness study area would have a significant adverse impact upon the ability of the minerals industry to explore for and develop potential mineral deposits in these areas.

2. Wilderness designation of all 49,670 acres within the Simpson Park wilderness study area would have a significant adverse impact upon the ability of the minerals industry to develop known deposits of barite and to explore for and develop other potential mineral deposits in the area.

For numbers 1 and 2 on previous page, the degree of impact upon known and potential mineral exploration opportunities varies by mineral type. For a description of the known mineral values and mineral potentials involved, refer to the Mineral Exploration and Development section of Chapter 3.

ENERGY AND UTILITIES

1. Designation of utility corridors would benefit utility companies.

Designation of utility corridors would help utility companies plan for future rights-of-way and would expedite the approval process.

Under this alternative, utility corridors would be designated only where transmission lines presently exist. A complete north-south east-west network would not be provided.

2. 30,000 cords of fuelwood would be available to the local population as an alternative energy source.

Harvest of 30,000 cords of pinyon-juniper fuelwood over 15 years would supply the local population with an alternate energy source equivalent to 4,158,000 gallons of fuel oil.

ECONOMIC IMPACTS

1. No significant impact to the area economy would occur as a result of wilderness designation.

The impacts would be the same as under the preferred alternative.

2. The disposal of public land would not significantly alter the tax base of Lander and Eureka counties.

The impacts would be the same as under the preferred alternative except of a lower magnitude.

This alternative calls for the disposal of only 4,200 acres in the long-term. Value of the lands identified for transfer is estimated at $2.0 million dollars, with an estimated assessed valuation of $0.7 million.

3. Harvest of woodland products would have an insignificant beneficial impact on the area economy.

Impact would be the same as under the preferred alternative except of a lower magnitude as a result of reduced harvest levels.

Bureau of Land Management permit fee revenues under the Resource Protection alternative would decline slightly more than 51 percent to $10,000. Fair market value to the consumer would decline from $317.061 to $165,200. The economic impact would be insignificant.

4. The increase in hunter days would be an insignificant benefit to the local economy.

Recreational hunting would reach its highest level in the long term. A total of 21,900 hunter days would result in estimated expenditures of $510,792 per year with income effects upon the area economy totaling $151,194 each year.

5. Licensing livestock grazing use at 15 percent below the five-year average licensed use level in the short term and 9 percent below the five-year average licensed use level in the long term would have a significant adverse impact on ranch income, livestock industry employment, and area economy employment.

Impacts to the livestock industry under this alternative would be significant and adverse in the short term. Total forage available to be licensed within the resource area would decrease by 36,696 with a resulting loss in net ranch income totaling $344,961 or 7 percent of the resource area´s estimated total net ranch income of $5,018,772. Employment in the livestock industry would decline by 9.4 percent (25.7 full time equivalent jobs), resulting in a loss of 46.4 jobs in the area economy. Rancher wealth would decrease a total of $1.8 million. While the reductions in forage available to be licensed would begin to be eased in the long term, impacts would continue to be adverse. The loss in livestock industry employment would continue above the 5 percent level, at 15.6 jobs.

Total animal unit month reductions of more than 15 percent of five-year average licensed use, in the short term, would continue at the high level of 22,216 animal unit months or 9.3 percent in the long term. Total income in the area economy would decline ranging from an annual $725,100 in the short term to a continued annual loss of $439,400 in the long term.

In response to the unavailability of forage, ranchers in the resource area would be faced with two options in order to remain in business. These would be to (1) reduce herd size, or (2) purchase hay or private grazing, to offset the loss of public grazing. Some ranchers are not in a position to adjust their operations in this manner and could be forced out of business.

North Shoshone Resource Conflict Area

A reduction of 5,127 animal unit months in the short term would be increased to 5,230 in the long term resulting in a loss of 32 percent of five-year average licensed use. This would result in a sustained annual loss of $118,808 in gross sales and $49,209 in net income. It is likely that some of the 14 operators in this resource conflict area would be required to supplement their income in some way or leave ranching entirely. Rancher wealth would decline by $261,500.

South Shoshone Resource Conflict Area

Forage reductions of 13,846 animal unit months would result in an annual loss in gross sales of $314,535 and net ranch income of $130,048, resulting in an economy-wide income reduction of $273,374 and an overall loss of 17.5 jobs. These short-term effects would be eased considerably in the long term with animal unit month reductions declining by only 2,992. Affected ranchers in the resource conflict area would have to be prepared to sustain themselves at more moderate operating levels for the first five years.

Eureka Resource Conflict Area

Animal unit month reductions in this resource conflict area amount to 15.5 percent of five-year average license use. The impacts of this reduction on gross sales would equal an annual loss of $380,208 in the short term.

Annual loss of revenue would be at a somewhat lower level of $294,498 throughout the long term. As this resource conflict area has the largest number of permittees (39) the animal unit month reductions may not be severe to individual operators. Approximately 11.7 full-time equivalent jobs in the livestock industry and 21.2 in the area economy would be lost.

Southern Valley Resource Conflict Area

With 15 operators in this resource conflict area, the loss of 986 animal unit months in the short term and 1,030 animal unit months in the long term would be the easiest to sustain. Net jobs lost amount to only 1.3 positions in the area economy.

Tables 4-7 and 4-8 detail the economic effects of the short and long term results of these actions.

SOCIAL IMPACTS

1. Except for livestock grazing and minerals (impacts described under livestock grazing, economics, and minerals sections above), no significant change in local resident access to public land resources would occur.

Public land as a portion of the resource area land base would decrease from approximately 91.5 percent to 91.4 percent. The size of the reduction from land disposal is not sufficient to alter the present supply-demand relationship.

Livestock permittees would continue to have access to public grazing lands except where public land is transferred to other ownership. In this case, disposal of public land would effectively reduce the amount of forage available to be licensed. The amount of livestock use would be reduced as described in the livestock section above. Adverse impact to area residents would result from the loss of jobs and income described in the economic impacts section.

Wilderness designation would not reduce the availability of woodland products as the productive capacity of the harvest base far exceeds demand. Wilderness designation would restrict mineral exploration and development opportunities in several areas. No operations are presently dependent upon these areas. Refer to the minerals section for a discussion of potential impacts. Livestock grazing opportunities would not be affected by wilderness designation. Present recreation use would not be significantly altered as a result of wilderness designation.

3. The management actions proposed would not affect public safety or the viability of local organizations.

No change from the existing situation is expected as a result of the management actions proposed.

Table 4-7 Economic Impacts to Livestock Grazing under the Protection Alternative (short term)

Resource Conflict Area	Animal unit months (+−)	Change[1] in gross Sales ($)	Change in Net Income ($)	Change in Livestock Industry Employment (FTE)[2]	Change in Area Economy Income ($)	Change in Area Economy Employment (FTE)
North Shoshone	-5,127	-116,460	-48,155	-3.6	-101,227	-6.5
South Shoshone	-13,846	-314,535	-130,048	-9.7	-273,374	-17.5
Eureka	-16,737	-380,208	-157,481	-11.7	-331,041	-21.2
Southern Valley	-986	-22,398	-9,277	-0.7	-19,501	-1.2
Resource Area Total	-36,696	-833,601	-344,961	-25.7	-725,143	-46.4

---

[1] change from existing situation
[2] FTE: Full Time Equivalent (2,000 hours)

Source: Professional judgement, Regional Economist

Table 4-8 Economic Impacts to Livestock Grazing under the Protection Alternative (long term)

Resource Conflict Area	Animal unit months (+-)	Change[1] in gross Sales ($)	Change in Net Income ($)	Change in Livestock Industry Employment (FTE)[2]	Change in Area Economy Income ($)	Change in Area Economy Employment (FTE)
North Shoshone	-5,230	-118,808	-49,209	-3.7	-103,444	-6.6
South Shoshone	-2,992	-67,968	-28,152	-2.1	-59,178	-3.8
Eureka	-12,964	-294,498	-121,980	-9.1	-256,414	-16.4
Southern Valley	-1,030	-23,398	-9,691	-0.7	-20,372	-1.3
Resource Area Total	-22,216	-504,672	-209,032	-15.6	-439,408	-28.1

---

[1] change from existing situation
[2] FTE: Full Time Equivalent (2,000 hours)

Source: Professional judgement, Regional Economist

ECONOMIC DEVELOPMENT ALTERNATIVE IMPACTS

The environmental consequences of this alternative are summarized in Table 4-9 by resource conflict area.

LAND OWNERSHIP

1. An estimated 83,940 acres of public land would be transferred to other ownership.

Based upon professional judgement, the identification of a 236,928-acre pool of lands would result in the estimated disposal of approximately 70,500 acres over a 15 year period. This disposal would result in the following percentage changes in land tenure within the resource area. Public land would decrease from 91.5% to 90.0%. Private land would increase from 8.5% to 10.0%.

Disposal would meet some community expansion needs, would reduce areas within the checkerboard ownership, would allow more efficient use of lands adjacent to private lands, and would provide opportunities for commercial and industrial development in the resource area.

Disposal would result in the transfer to private ownership, within 15 years, of up to 13,440 acres (not included in the disposal pool) of public land suitable for agriculture. This represents a 0.3% reduction in the number of acres of public lands within the resource area.

WOODLANDS

1. The Resource Area´s harvest base would be reduced.

Wilderness and land disposal actions would reduce the woodland harvest base by a total of 10,000 acres. Recommending 82,600 acres of the Antelope wilderness study area as suitable for wilderness would result in 5,000 acres of potentially-manageable woodland being withdrawn from management for woodland products. Disposal of 70,500 acres would include approximately 5,000 acres of pinyon-juniper woodland. This action would result in the immediate loss of an estimated 40,000 cords of fuelwood and 25,000 Christmas trees as a result of the removal of this acreage from the overall woodland management base. This would be a significant adverse impact upon the woodland harvest base. However, it would not affect the ability of the woodlands program to meet public demand.

2. Trend of stand condition would improve on 12,750 acres of pinyon-juniper woodland.

Selective harvest of pinyon-juniper woodland for woodland products would improve overall forest productivity, stand health and vigor on approximately 11,250 acres over the 15-year implementation period.

Clearcutting or chaining of several pinyon-juniper areas totaling approximately 1,500 acres over 15 years would improve Christmas tree productivity on cutover areas following encroachment from adjacent stands. A total of less than 2 percent of the woodland management base would be harvested over the implementation period.

3. Public demand for wood products would be adequately met.

Approximately 4,000 cords of firewood, 6,000 juniper posts, 6,600 Christmas trees and 52,500 pounds of

Table 4-9 Impacts of the Economic Development Alternative by Resource Conflict Area

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA[1]	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
LAND OWNERSHIP Acres disposed	24,941	22,685	26,720	9,594	83,940(2%)[3]
WOODLANDS					
Acres harvested	4,462	200	4,462	3,626	12,750(2%)[4]
Acres of harvest base removed	0	0	10,000	0	10,000(2%)[4] (SA)[5]
Availability of woodland products	Public demand for woodland products would be met				
WILDLIFE					
Riparian habitat condition[2] (acres) projected long term					
Poor	380	150	1,240	290	2,060(+7%)[6]
Fair	30	70	610	110	820(+3%)
Good	380	150	1,100	50	1,680(-10%)(SA)
Aquatic habitat condition[2] (miles of stream) projected long term					
Poor	25.8	12.2	34.6	19.4	95.0(+30%)[6](SA)
Fair	6.3	4.3	15.2	3.0	28.8(-38%)
Good	13.5	7.5	14.2	0	35.2(+8%)
Reasonable Numbers	Animal unit months for reasonable numbers of big game animals (mule deer and pronghorn antelope) would not be available in either the short or long term. (0%)[6](SA).				
WILD HORSES Number of animals short term	390(SA)	0	645(SA)	65(SA)	1,100(SA)
LIVESTOCK GRAZING Availability of forage (animal unit months)					
current use/ 5-year average licensed use	89,836	16,355	107,942	26,241	239,317
projected short term	113,362	15,748	122,448	27,541	279,099(+17%)(SB)
projected long term	130,689	14,018	130,714	27,859	303,280(+27%)(SB)
VEGETATION					
Long-term change[6] in ecologicl condition(%)	+12(SB)	0	+8	+5	+9
Long-term change[6] in vegetation trend (%)	+25(SB)	+12(SB)	+6	+4	+11
Riparian vegetation condition[7]					

Table 4-9 Impacts of the Economic Development Alternative by Resource Conflict Area (Continued)

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA 1/	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
CULTURAL RESOURCES					
Potential sites protected	0	0	1,167	0	1,167
Potential sites disturbed					1,572(SA)
WILDERNESS					
Acres protected	N/A	N/A	82,600(SB)	N/A	82,600
Acres not protected	N/A	N/A	69,560(SA)	N/A	69,560
RECREATION					
Hunter days					
short term					17,600(+6%)
long term					18,800(+14%)(SB)
Primitive vehicle ways closed (miles)	0	0	9.0	0	9.0
MINERAL EXPLORATION AND DEVELOPMENT					
Acres restricted due to wilderness recommendations	0	0	82,600(SA)	0	82,600
ENERGY AND UTILITIES					
Bulk transfer of energy	The network of corridors proposed would provide for the establishment of utilities along all of the routes identified in the Western Regional Corridor Study.				

Source: Shoshone-Eureka planning team estimates

1/ resource conflict area
2/ Threshold is good or better condition. Some areas included in good condition class may actually be in excellent condition.
3/ Portion of total public land (4.3 million acres) within the resource area
4/ Portion of total woodland harvest base (600,000 acres)
5/ SB = significant beneficial impact
SA = significant adverse impact
6/ Percent change from existing situation
7/ Values for riparian vegetation condition are the same as those for riparian habitat condition in the wildlife section

pine nuts could be potentially harvested annually. This rate of harvest would adequately meet demand and be well within sustained-yield limitations.

WILDLIFE HABITAT

1. Terrestrial wildlife habitat would remain in current condition or decline.

Effects of the livestock management program on terrestrial wildlife habitat would be similar to those under the preferred alternative. However, benefits to wildlife would be limited or non-existent since any improvement in range condition would be offset by increased numbers of livestock using the addditional forage available. As a result, terrestrial wildlife habitat would not improve and approximately 50 percent of those areas in fair or better conditon would decline one condition class in the long term. For that reason, reasonable numbers of big game would not be achieved in either the short term or long term, a significant adverse impact.

Wilderness designation of 82,100 acres of the Antelope wilderness study area would benefit wildlife habitat in that area through the overall resource protection such designation provides, but would not be a significant impact.

Impacts from woodland harvest would be the same as those identified under the preferred alternative but on a slightly larger area.

2. Mule deer ranges in the Eureka resource conflict area would be adversely affected by land disposal.

Impacts would be the same as those under the preferred alternative.

3. Approximately 340 acres of riparian habitat would improve, while unprotected riparian habitat would remain static or decline.

Impacts would be the same as those under the preferred alternative but on smaller amounts of acreage. About 340 acres of riparian habitat would improve and another 1,080 acres would be maintained in good condition in the short term.

In the long term, an additional 360 acres would improve to good condition and 2,880 acres would continue to decline. Short-term and long-term actions would result in a 10 percent decrease in areas in good condition from the existing situation, a significant adverse impact. Table 4-9 shows projected riparian habitat condition by resource conflict area.

4. Approximately 19.5 miles of protected aquatic habitat would improve, while unprotected aquatic habitat would remain static or decline.

Impacts would be the same as those under the preferred alternative but fewer streams would be improved and maintained and more streams would decline. Approximately 19.5 miles of streams would improve and another 12 miles would be maintained in good condition. The remaining 127.5 miles would be maintained in less than good condition or continue to decline in the short term.

In the long term about 3.5 miles of additional streams would improve to good codition. The remaining 124 miles would continue to decline. The net result, an 8 percent increase in streams in good condition as compared to the existing situation, would be an insignificant beneficial impact. Table 4-9 shows projected aquatic habitat condition by resource conflict area.

WILD HORSES

1. Wild horse numbers would be reduced in all resource conflict areas. The free-roaming nature of wild horses would be adversely impacted as would distinct herd characteristics.

Wild horse numbers would be reduced 70 percent resource area-wide with the following percentage reductions in each resource conflict area: South Shoshone, 83 percent; Eureka, 61 percent; and Southern Valley, 79 percent. This would be a significant adverse impact in all cases. Six individual herds would be reduced to less than 50 animals each, also a significant adverse impact to these individual herds.

The reduction of numbers in the various herds would cause some distinct herd characteristics such as color, markings, and animal size to be lost. This would also be a significant adverse impact.

Impacts from new fence construction would be the same as under the preferred alternative but of greater magnitude since more fences would be constructed under this alternative. Adjusted horse numbers would be maintained in the long term with a continuation of short term impacts.

2. The condition of remaining wild horses would improve.

Water developments, including three proposed for wild horses, would provide an adequate water supply and, thus, improve the condition of those wild horses remaining after the 70 percent reduction in numbers. This would be a significant beneficial impact to the remaining horses in both the short term and long term.

Any increases in forage, resulting from reduction in horse numbers, would be utilized by livestock once monitoring shows it to be available. This would be an adverse but insignificant impact to the remaining horses.

LIVESTOCK GRAZING

1. Livestock grazing use would increase 39,782 animal unit months above the five-year average licensed use level of 239,317 to 279,099 animal unit months within the Shoshone-Eureka Resource Area in the short term. This 17 percent increase is a significant beneficial impact.

No change in livestock use is proposed in this alternative. However, due to the management actions discussed below, the following cumulative effects of all actions in the short term are projected, in animal unit months, for each resource conflict area (These levels assume that the impacts of all short term actions are realized in the short term, and that rangeland monitoring shows the vegetation to be available): North Shoshone -607 (4 percent decrease), South Shoshone 23,526 (26 percent increase), Eureka, 14,506 (13 percent increase), and Southern Valley, 1,300 (5 percent increase). This is a significant beneficial impact in the South Shoshone and Eureka resource conflict areas.

Disposal of public land would effectively reduce animal unit months available to be licensed for livestock use. The effects would be the same as under the preferred alternative except of a greater magnitude as the expected loss of grazing land is 27,980 acres in the short term. The loss of forage (expressed as animal unit months), by resource conflict area, is as follows: North Shoshone (612), South Shoshone (424), Eureka (908), and Southern Valley (129). This would be an adverse effect upon livestock grazing.

Selective harvest and small-scale clearcutting or chaining of 4,250 acres of woodland for firewood and fence posts would result in approximately 332 animal unit months of forage available to be grazed by livestock, wild horses, and wildlife as a result of increased understory production following reduction or removal of the woodland overstory. The increase in animal unit months, by resource conflict area, are as follows: North Shoshone (5), South Shoshone (107), Eureka (86), and Southern Valley (98). This would benefit livestock grazing.

Authorizing livestock use at up to 300,572 animal unit months, the resource area active preference use level in the short term, would not result in an immediate increase in livestock grazing use above current actual use levels. The active preference levels by resource conflict area are as follows: North Shoshone (19,729); South Shoshone (109,842); Eureka (137,623); and Southern Valley (33,378).

Initial wild horse reductions would make an additional 30,552 animal unit months of forage available to livestock. Increases in animal unit months available to be grazed by livestock by resource conflict area, are as follows: North Shoshone (0), South Shoshone (19,716), Eureka (8,436), and Southern Valley (2,400). This would benefit livestock grazing in all resource conflict areas except the North Shoshone.

The impacts of monitoring and adjusting grazing use to achieve sustained-yield levels of use would be the same as under the preferred alternative.

The impacts of implementing five allotment management plans and construction of projects in support of these plans would be the same as under the preferred alternative.

The impacts of vegetation manipulation would be the same as under the preferred alternative except of a greater magnitude as 25,500 acres of vegetation manipulation would be implemented. As a direct result of the seeded grasses, 8,200 animal unit months would be available for livestock grazing. The South Shoshone resource conflict area would receive 3,367 animal unit months as a result of seedings and the Eureka resource conflict area would receive 4,833 animal unit months.

2. Loss of livestock grazing would occur during riparian improvement.

Impacts would be the same as under the preferred alternative except of a lower magnitude as only 340 acres would be excluded during riparian improvement. The temporary loss from these areas would amount to 113 animal unit months which would not be significant.

3. No adjustments to grazing use levels would occur as a result of wilderness designation.

Impacts would be the same as under the preferred alternative except that a smaller area would be influenced by the Wilderness Management Policy as only the Antelope wilderness study area would be recommended as suitable for wilderness designation.

4. Livestock grazing use would increase 63,963 animal unit months above the five-year average licensed use level in the long term. This 27 percent increase would be a significant beneficial impact to the Shoshone-Eureka Resource Area.

The cumulative effect of all management actions in this alternative in the long term would increase the five-year licensed use level of 239,317 animal unit months by 63,963, to a level of 303,280. Management actions in the long term would be similar to those in the short term. Analyses of the impacts of these actions are the same as under the preferred alternative. The change in animal unit months expected by resource conflict area is as follows: North Shoshone, -2,337 (14 percent decrease), South Shoshone, 40,853 (45 percent increase), Eureka, 22,772 (21 percent increase), and Southern Valley, 2,675 (11 percent increase). This would be a significant adverse impact to the North Shoshone resource conflict area and a significant beneficial impact to the South Shoshone, Eureka, and Southern Valley resource conflict areas.

VEGETATION

1. Ecological condition and vegetation trend would improve in the South Shoshone, Eureka, and Southern Valley resource conflict areas and declining ecological condition would stabilize in the North Shoshone resource conflict area.

Long-term changes in ecological condition and vegetation trend would be by resource conflict area, as follows: North Shoshone (0 percent improvement in condition, 12 percent improvement in trend), South Shoshone (12 percent improvement in condition, 25 percent improvement in trend), Eureka (8 percent improvement in condition, 6 percent improvement in trend), and Southern Valley (5 percent improvement in condition, 4 percent improvement in trend). The improvement in ecological condition is a significant beneficial impact in the South Shoshone resource conflict area. The improvement in vegetation trend is a significant beneficial impact in the North Shoshone and South Shoshone resource conflict areas. The percent change in ecological condition and vegetation trend for each resource conflict area is shown in Table 4-9.

The above noted changes in long-term condition and trend would be brought about by both short and long-term management actions. The impacts of short-term actions are discussed below, followed by a brief summary of expected long-term impacts.

Authorizing livestock grazing use at up to 300,572 animal unit months, the resource area active preference use level, in the short-term would not result in an immediate increase in livestock grazing use above the last five-year average use level. Ecological condition and vegetation trend would not be expected to change from current levels as a result of initial livestock use authorization.

Initial wild horse reductions would reduce grazing pressure in all wild horse herd areas. Vegetation utilization, in animal unit months, would be significantly reduced in the South Shoshone (19,716); Eureka (8,436); and Southern Valley (2,400) resource conflict areas. Ecological condition and trend would begin to improve as a result of this reduction in use. Animal unit months available to livestock as a result of horse reductions would not be authorized until monitoring data shows that the forage is available. Reduced wild horse numbers would be maintained in the long term.

The impacts of monitoring and adjusting grazing use to achieve sustained-yield levels of use would be the same as under the preferred alternative.

The impacts of implementing five allotment management plans and construction of projects in support of these plans would be the same as under the preferred alternative.

The impacts of vegetative manipulation would be the same as under the preferred alternative except of a greater magnitude as 25,500 acres of vegetation manipulation would be implemented.

The impacts of the management actions designed to meet the objectives of this alternative, in the long term, would be the same as under the preferred alternative.

2. Approximately 340 acres of riparian vegetation would improve, while unprotected riparian vegetation would remain static or decline.

Impacts in both the short term and long term would be the same as described in the riparian habitat discussion in the Wildlife Habitat Section of this alternative.

CULTURAL RESOURCES

1. Wilderness designation would provide additional protection for an estimated 1,167 cultural resource sites.

Designation of 82,600 acres for wilderness within the Antelope wilderness study area would provide protection for an estimated 1,167 cultural resources sites by limiting access and surface-disturbing activities. Recommending 69,560 acres as nonsuitable would not provide this extra benefit for an estimated 984 sites. See Table 4-10 for a summary of cultural resources that might be affected.

2. Land disposal, woodland harvest, increased livestock grazing, and rangeland improvement projects would have a significant adverse impact upon cultural resource sites.

The cumulative adverse impact of this alternative would be greater than for the other alternatives.

Disposal of 83,940 acres over 15 years could impact an estimated 212 cultural resources sites. However, this worst-case prediction is unlikely because most of the locations

Table 4-10 Worst-case Estimate of the Number of Cultural Resources That Could be Affected by the Economic Development Alternative.

	Management Site Types						
	Prehistoric			Historic			
Management Actions	Open	Rock Shelter	Rock Art	Euroamerican	Aboriginal	Isolated Find	Total
Wilderness 1/							
Suitable (82,600 acres)	736	5	1	79	1	345	1,167
Unsuitable (69,560 acres)	619	5	1	67	1	291	984
Land Disposal 2/							
70,500 acres	74	0	0	14	0	90	178
13,440 acres	14	0	0	3	0	17	34
Woodland Products 1/							
12,750 acres	114	1	0	12	0	53	180
Livestock 3/							
Wells (7)	0	0	0	0	0	0	0
Spring Development (25 + 44 mi. P/L)	29	0	0	4	0	2	35
Fences (138 miles)	35	1	0	5	0	12	53
Seeding (25,500 acres) 4/	102 5/	0	0	0	0	-	102
Wild Horses 3/							
Spring Development (3)	2	0	0	0	0	0	2
Wildlife 3/							
Spring Development (4)	2	0	0	0	0	0	2
Fences (12 miles)	3	0	0	0	0	1	4
Guzzlers (4)	0	0	0	0	0	0	0
Total	1,730	12	2	184	2	811	2,741

1/Based on resource area Class I and Class II inventories.
2/Based on resource area Class I and Class II inventories for land disposals
3/Based on resource area Class I inventories for the specific kinds of projects
4/Based on survey done in the Tonopah Resource Area
5/Open prehistoric sites cannot be separated from isolated finds.

Source: District Cultural Resource Reports
Methodology: Number of acres per miles per number inventoried divided by the number of sites recorded.

recommended for disposal are in areas of lower-than-average probability for the occurrence of cultural resources and because standard operating procedures would eliminate from disposal any tracts containing sites eligible for the National Register of Historic Places.

Harvest of 12,570 acres over the long term has the potential for impacting 180 cultural resources. Because areas suitable for harvesting woodland products are also generally areas with a higher-than-average potential for cultural resources, the actual worst-case situation in these areas would be much greater than indicated in Table 4-10.

Authorizing livestock use up to 300,572 animal unit months would increase the severity of impacts to cultural resources by livestock trampling. Future adjustments would proportionally increase or decrease impacts. Livestock management has been and probably would remain one of the most detrimental impacts upon cultural resources. Under a worst-case situation, the improvements proposed for the short term would potentially impact 190 cultural resources sites. Long-term improvements would impact cultural resources at approximately the following rates: one site for every 0.8 springs (includes pipelines), one site for every 2.7 miles of fence, and one site for every 250 acres of seeding.

Reducing wild horse use would reduce impacts to cultural resources by trampling. Where horse use is concentrated damage to cultural resources is generally severe. Over the long term, the amount of damage would be directly related to and in proportion with the direction and extent of adjustments in wild horse use.

Development of 3 springs for wild horse use would potentially impact 2 archaeological sites; long-term impacts would be approximately one cultural resource for every 1.5 springs developed.

Proposed wildlife management developments would impact an estimated 6 cultural resources in the short term. Long-term impacts would be approximately one site per 1.5 spring developments, one site for every 2.8 miles of fence, and one site for every 10 guzzlers.

VISUAL RESOURCES

1. Wilderness designation would extend additional protection to the visual resource on 82,600 acres.

Wilderness designation for 82,600 acres within the Antelope wilderness study area would extend extra protection to the visual resource within this area. This would not be a significant benefit, however, as very little development is expected during the long term.

2. Utility corridor designation and identification would result in an overall beneficial impact to visual resources.

Assuming that the same number of projects would be developed in the long term with or without corridors, the establishment of corridors would result in a beneficial impact. On a resource area-wide basis, the grouping of utility lines into corridors would result in fewer adverse visual impacts than not grouping them into corridors. The adverse impacts of transmission lines would be concentrated by placing them proximate to each other.

Locating corridors to avoid the visual resource management Class II areas (The Narrows and Devil´s Gate) and the Hickison Summit recreation site would help maintain the scenic quality of these areas over the long term.

3. Concentration of utility lines within corridors would have an insignificant adverse effect upon the visual resource within the corridors.

Consolidation of lines along corridors would result in a greater adverse visual impact within the corridor itself than if lines were constructed along separate routes. However, as all lines would be constructed consistent with the appropriate visual resource management class guidelines, the overall impact would not be significant.

WILDERNESS

1. Wilderness designation would protect wildernesss values on 82,600 acres.

Wilderness designation for 82,600 acres of the Antelope wilderness study area would have a beneficial impact by protecting the wilderness values of the area over the long term. A description of the wilderness values within this area is contained in Chapter 3.

The Antelope area is considered to be manageable as wilderness over the long term. For a discussion of the manageability of each area refer to the Wilderness section of Chapter 3.

Designation of this area would help balance the ecosystem diversity of the National Wilderness Preservation System. As there are other areas either already designated or under consideration for wilderness which are classified as being within the same ecosystem, this would not be a significant benefit.

2. Wilderness values would not be protected on 69,560 acres.

Recommending the entire Simpson Park and Roberts wilderness study areas and 4,800 acres of the Antelope wilderness study area as nonsuitable for wilderness designation would result in the loss of wilderness values within the Roberts wilderness study area and the northern half of the Simpson Park wilderness study area in the short term as a result of mineral exploration and development. This would amount to approximately 35,000 acres and would be a significant adverse impact upon wilderness values. Wilderness values in the southern half of the Simpson Park wilderness study area and 4,800 acres of the Antelope wilderness study area would still be present over the long term. This would amount to approximately 34,560 acres.

3. Woodland harvest actions would not impact wilderness values.

Woodland product management would not impact areas recommended as nonsuitable over the long term as more accessible areas would be available to satisfy all projected demands.

4. Rangeland management actions would have a beneficial impact upon wilderness values.

Monitoring and adjusting livestock

and wild horse use would bring grazing use into conformance with capacity, and would have a positive impact on wilderness values by enhancing the naturalness of the area.

RECREATION

1. Wilderness designation would not have a significant adverse impact upon existing recreation use.

Recommending 82,600 acres within the Antelope wilderness study area as suitable for wilderness designation would not have a significant impact upon existing recreation use as a result of closing the area to motorized use. Deer hunting is the primary recreational use of the area. Much of this motorized use takes place on existing cherry-stemmed roads which would remain open after wilderness designation. Recreation use on a total of 9 miles of primitive vehicle ways within the Antelope area would be prohibited.

2. Outstanding opportunities for primitive recreation would be protected in some areas and lost in others.

Outstanding opportunities for primitive recreation would be maintained within the Antelope area. Existing outstanding primitive recreation opportunities in the Roberts wilderness study area and in the northern half of the Simpson Park wilderness study area would be lost during the short term as a result of expected mineral exploration. Existing opportunities for recreation would continue in the southern half of the Simpson Park area over the long term as no development is expected. Refer to the Wilderness section of Chapter 3 for a discussion of these opportunities.

3. Primitive recreation use would not increase significantly, while hunting use would increase significantly over the long term.

Wilderness designation would generate an insignificant increase in new non-motorized recreation use. It is expected that this type of use in the Antelope area would increase by 1,200 visitor hours per year (Professional judgement, Battle Mountain District Wilderness Specialist).

Under this alternative, wildlife populations would increase to some extent, but big game populations would not be expected to reach reasonable numbers either in the short term or long term. As a result, total hunter days would increase an estimated 6 percent above average present use in the short term, and increase an estimated 14 percent above average present use in the long term. Table 4-9 shows the number of hunter days estimated under this alternative.

MINERAL EXPLORATION AND DEVELOPMENT

General Impacts

The general impacts of wilderness designation would be the same for this alternative as under the preferred alternative, except that a smaller number of acres would be involved.

Specific Impacts

1. Wilderness designation of all 82,600 acres within the Antelope wilderness study area would have a significant adverse impact upon the ability of the mineral industry to explore for and develop potential mineral deposits in the area.

2. Not designating any of the 15,090-acre Roberts wilderness study area and 4,800 acres of the Antelope wilderness study area would have a significant beneficial impact upon the ability of the mineral industry to explore for and develop potential mineral deposits in these areas.

3. Not designating any of the 49,670-acre Simpson Park wilderness study area as wilderness would have a significant beneficial impact upon the ability of the mineral industry to develop known deposits of barite and to explore for and develop other potential mineral deposits in this area.

For numbers 1, 2, and 3 above, the degree of potential impact upon mineral exploration and development opportunities varies by mineral type. For a description of the mineral potentials involved, refer to the Mineral Exploration and Development section of Chapter 3.

ENERGY AND UTILITIES

1. Designation of utility corridors would significantly benefit utility companies.

Designation of utility corridors would help utility companies plan for future rights-of-way and would expedite the Bureau of Land Management approval process.

The proposed corridors provide routing for all the potential facilities listed in the Western Regional Corridor Study.

2. 60,000 cords of fuelwood would be available to the local population as an alternative energy source.

Harvest of 60,000 cords of pinyon-juniper fuelwood over 15 years would supply the local population with an alternate energy source equivalent to 8,316,000 gallons of fuel oil.

ECONOMIC IMPACTS

1. No significant impact to the area economy would occur as a result of wilderness designation.

The impacts would be the same as under the preferred alternative.

2. The disposal of public land would alter the tax base of Lander, Eureka, and Nye counties.

The impacts would be the same as under the preferred alternative except of a greater magnitude.

Disposal of 70,500 acres under this alternative would increase private ownership of land in the resource area by 17.6 percent and increase the fair market value of private land in the area by $12,252,475. Assessed valuation for Lander, Eureka, and Nye counties would increase by an estimated total of $4,288,366.

3. Harvest of woodland products would have an insignificant beneficial impact on the local economy.

Under this alternative, Bureau of Land Management revenues from permit fees and fair market value benefits to consumers would more than double with permit values increasing 111 percent to $46,100, and fair market value increasing 123 percent to $707,200.

4. Increased hunter days would be an insignificant benefit to the local economy.

Hunter days will increase, under

this alternative, by 2,300 additional days over the estimated 16,500 days of current use. Associated expenditures would increase to $437,688 resulting in $129,555 increase in area income.

5. Licensing livestock grazing use at 17 percent above the five-year average licensed use in the short term and 27 percent above the five-year average licensed use in the long term would have a significant beneficial impact on ranch wealth, ranch income, livestock industry employment, and area economy employment.

Ranch wealth, net ranch income, livestock industry employment, and area economy employment would all benefit significantly under this alternative. Livestock industry jobs would increase by 28 full-time equivalents, and total area economy employment would increase by slightly more than 50 full-time equivalents in the short term. Long-term effects are even more favorable, with the livestock industry requiring 45 additional employees and contributing to the employment of a total of 81 persons in the area economy. Ranch wealth would increase, in the long-term by $3.2 million and net ranch income would increase by more than $600,000.

Significant beneficial impacts would occur within the South Shoshone resource conflict area to net ranch income, livestock industry employment, and total area economy employment. The Eureka resource conflict area shows a significant beneficial impact to livestock industry employment. Impacts in the North Shoshone resource conflict area would be adverse due to land disposal actions. These impacts are below the level of significance and may be offset by the private purchase and utilization of these lands for grazing or hay production.

See Tables 4-11 and 4-12 for details of the economic impacts to livestock grazing under this alternative.

SOCIAL IMPACTS

L. No significant change (except for livestock grazing and minerals) in local resident access to public land resources would occur.

Public land as a portion of the resource area land base would decrease from approximately 91.5 percent to 90 percent. The size of the reduction of public land is not sufficient to alter the present supply-demand relationship on a resource area-wide basis. Livestock permittees would continue to have access to public grazing lands except where public land is transferred to other ownership. In this case, disposal of public land would effectively reduce the amount of forage available to be licensed. On a resource area-wide basis, however, total available forage would increase as a result of other management actions (see livestock section). This net increase would have a beneficial impact on employment and income, but would not change the population characteristics of the area (see economics section for further details).

Wilderness designation would not reduce the availability of woodland products as the productive capacity of the harvest base far exceeds demand. Wilderness designation would restrict mineral exploration opportunities in one area with moderate potential for some mineral values.

Table 4-11 Economic Impacts to Livestock Grazing under the Economic Development Alternative (short term)

Resource Conflict Area	Animal unit months (+-)	Change[1] in gross Sales ($)	Change in Net Income ($)	Change in Livestock Industry Employment (FTE)[2]	Change in Area Economy Income ($)	Change in Area Economy Employment (FTE)
North Shoshone	-607	-13,789	-5,711	-0.4	-12,005	-0.8
South Shoshone	+23,526	+534,432	+221,360	+16.5	+465,320	+29.8
Eureka	+14,506	+329,527	+136,489	+10.2	+286,914	+18.4
Southern Valley	+2,357	+53,543	+22,177	+1.7	+46,619	+3.0
Resource Area Total	+39,782	+903,713	+374,315	+28.0	+786,848	+50.4

---

[1] change from existing situation

[2] FTE: Full Time Equivalent (2,000 hours)

Source: Professional judgement, Regional Economist

Table 4-12 Economic Impacts to Livestock Grazing under the Economic Development Alternative (long term)

Resource Conflict Area	Animal unit months (+-)	Change[1] in gross Sales ($)	Change in Net Income ($)	Change in Livestock Industry Employment (FTE)[2]	Change in Area Economy Income ($)	Change in Area Economy Employment (FTE)
North Shoshone	-2,337	-53,088	-21,989	-1.6	-46,223	-3.0
South Shoshone	+40,853	+928,043	+384,392	+28.7	+808,031	+51.8
Eureka	+22,722	+516,168	+213,795	+16.0	+449,418	+28.8
Southern Valley	+2,675	+60,767	+25,169	+1.9	+52,908	+3.4
Resource Area Total	+63,913	1,451,890	601,367	45.0	1,264,134	81.0

[1] change from existing situation
[2] FTE: Full Time Equivalent (2,000 hours)

Source: Professional judgement, Regional Economist

No operations are presently dependent upon this area. Refer to the minerals section for a description of potential impacts. Livestock grazing opportunities would not be altered by wilderness designation. Present recreation use would not be significantly impacted by wilderness recreation.

2. The management actions proposed would not affect public safety or the viability of local organizations.

No change from the existing situation is expected as a result of the management actions proposed.

NO ACTION ALTERNATIVE IMPACTS

The environmental consequences of this alternative are summarized in Table 4-13 by resource conflict area.

LAND OWNERSHIP

1. No public lands would be transferred to other ownership.

Not changing the present pattern of land ownership within the resource area would result in (1) lands being made available for lease, with no offer to purchase, to satisfy needs for recreation or public purposes near communities; (2) lands not being made available through disposal authorities to meet residential, commercial, industrial or agricultural needs; and (3) lands not being disposed of which are isolated or difficult to manage.

WOODLANDS

1. Trend of stand condition would improve on 2,625 acres of pinyon-juniper woodland.

Selective harvest of pinyon-juniper woodland from several areas designated for commercial and noncommercial sale of woodland products would improve overall forest productivity, stand health, and vigor on approximately 2,625 acres over the 15-year implementation period. This represents harvest on 0.4 percent of the total woodland management base over the implementation period.

2. Public demand for wood products would not be met.

Approximately 513 cords of fuelwood, 5,335 juniper posts, 600 Christmas trees, and 2,500 pounds of pine nuts would be harvested noncommercially per year. Approximately 2,713 Christmas trees and 50,000 pounds of pine nuts could be potentially harvested on a commercial basis annually. Demand for commercial and non--commercial firewood, and for commercial Christmas trees would not be met. This would be a significant adverse impact.

WILDLIFE HABITAT

1. Terrestrial wildlife habitat would generally decline.

Current resource uses and conflicts would continue and lead to a decline in wildlife habitat condition. Since there would be significant changes in ecological condition and trend of the native range, big game habitat currently in poor condition would not improve and habitat in fair or better condition would decline. The extent and location of these declines cannot be projected as quantifiable data on terrestrial habitat condition is not available. The result of the decline would be that reasonable numbers of big game would not be achieved in either the short term or long term, a significant adverse impact.

2. Riparian and aquatic habitat would generally be maintained in current condition class or decline.

Current resource uses would adversely impact riparian and aquatic habitats. It is anticipated that all the riparian and aquatic habitat currently in poor condition would remain in poor condition and about 50 percent of those habitats in fair or better condition would decline one condition class in the short term in all resource conflict areas and the resource area as a whole. Eighty percent of the areas in fair or better condition at the end of the short term would decline one condition class in the long term.

Table 4-13 Impacts of the No Action Alternative by Resource Conflict Area

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA[1/]	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
LAND OWNERSHIP					
Acres disposed	0	0	0	0	0
WOODLANDS					
Acres harvested					2,625(0.4%)[3/]
Acres of harvest base removed	0	0	0	0	0
Availability of woodland products	Demand for commercial and noncommercial firewood, and for commercial Christmas trees would not be met. (SA)[4/]				
WILDLIFE					
Riparian habitat condition[2/] (acres) projected long term					
Poor	730	230	1,940	310	3,210(+32%)(SA)
Fair	50	120	850	110	1,130(+10%)
Good	10	20	160	30	220(-42%)(SA)
Aquatic habitat condition[2/] (miles of stream) projected long term					
Poor	46.3	21.0	56.7	20.9	144.9(+61%)[5/](SA)
Fair	2.1	2.0	5.6	1.5	11.2(-49%)
Good	0.2	1.0	1.7	0.0	2.9(-12%)(SA)
Reasonable numbers	Animal unit months for reasonable numbers of big game animals (mule deer and pronghorn antelope) would not be available in the short or long term. (0%)[6/] (SA)				
WILD HORSES					
Number of animals short term	2,033	0	1,347	280	3,660
LIVESTOCK GRAZING					
Availability of forage (animal unit months) current use/ 5-year average licensed use	89,836	16,355	107,942	26,241	239,317
projected short term[6/]					
projected long term[6/]					

Table 4-13 Impacts of the No Action Alternative by Resource Conflict Area (continued)

ENVIRONMENTAL COMPONENT	SOUTH SHOSHONE RCA[1]	NORTH SHOSHONE RCA	EUREKA RCA	SOUTHERN VALLEY RCA	SHOSHONE-EUREKA RESOURCE AREA
VEGETATION					
Long-term change[5] in ecologicl condition(%)	-16(SA)	-17(SA)	-13	-18(SA)	-15(SA)
Long-term change[5] in vegetation trend (%)	-2	-15(SA)	-20(SA)	-20(SA)	-14(SA)
Riparian vegetation condition[7]					
CULTURAL RESOURCES					
Potential sites protected	0	0	0	0	0
Potential sites disturbed					38(SA)
WILDERNESS					
Acres protected	N/A	N/A	0	N/A	0
Acres not protected	N/A	N/A	152,160(SA)	N/A	152,160
RECREATION					
Hunter days long term					12,300(-25%)(SA)
Primitive vehicle ways closed (miles)	N/A	N/A	0	N/A	0
MINERAL EXPLORATION AND DEVELOPMENT					
Acres restricted due to wilderness recommendations	N/A	N/A	0	N/A	0
ENERGY AND UTILITIES					
Bulk transfer of energy	Lack of designated corridors would hinder planning efforts of utility companies contemplating construction of major transmission utilities through Nevada. (SA)				

Source: Shoshone - Eureka planning team estimates

[1] Resource conflict area

[2] Threshold is good or better condition. Some areas included in good condition class may actually be in excellent condition.

[3] Portion of total woodland harvest base (600,000 acres)

[4] SB = significant beneficial impact
SA = significant adverse impact

[5] Percent change from existing situation

[6] Data is insufficient to judge how future vegetation changes would affect livestock use.

[7] Values for riparian vegetation condition are the same as those for riparian habitat condition in the wildlife section.

As a result, riparian and aquatic habitat in good condition would decline 42 percent and 12 percent, respectively compared to the existing situation, a significant adverse impact in both cases. Table 4-13 shows projected riparian and aquatic habitat condition by resource conflict area for the long term.

The long term result of decline of riparian habitat would be a loss of habitat diversity with a corresponding reduction of numbers of species as well as numbers of animals dependent on these areas. Based on habitat inventories conducted in 1980 and 1981, non-game birds and sage grouse would be most affected. Likewise the decline in aquatic habitat condition would result in loss of endemic fish populations as well as sport fish populations.

On a case-by-case basis, some riparian and aquatic habitat improvement would occur. Such improvement would be minimal and would not be significant in any one resource conflict area or the resource area as a whole.

WILD HORSES

1. Wild horse herd numbers would not change. The free-roaming nature of wild horses would not be affected.

All wild horse herd populations would remain essentially unchanged. This would not be a significant impact in either the short term or long term.

There would be no significant impacts to the free-roaming nature of wild horses or to herd area size since fences currently are not a problem and new fence construction would not be a major component of

2. The condition of horses would not improve.

Since no additional water supplies or forage would be provided, no improvement of wild horse condition would occur in the short term or long term. This would not be a significant impact in either case.

LIVESTOCK GRAZING

1. Livestock grazing use would remain at the five-year average licensed use level within the Shoshone-Eureka Resource Area in the short term.

No change in livestock use is proposed in this alternative. Existing data is insufficient to predict how future vegetation changes would affect availability of forage.

Livestock grazing use levels would be authorized at up to 300,572 animal unit months, the active preference use level, upon demand. For analysis purposes, however, it is assumed that licensed use would be equivalent to 239,317 animal unit months, the last five-year average use level over the resource area.

Trends in vegetation condition over the resource area are expected to continue in the same proportions as are currently found in the resource area (Table 3-3). Unplanned and unscheduled rangeland projects would only be implemented to resolve site-specific problems, as necessary, to maintain existing management practices and would not be equivalent to implementing an allotment managmemnt plan or any intensive management system.

No action would be taken to reduce the competition for available forage among livestock, wild horses, and wildlife. Current utilization levels and seasons-of-use would continue throughout the resource area. The effect of continued competition for forage among livestock, wild horses, and wildlife would be to reduce the amount of forage available to livestock, wild horses, and wildlife over the short term and long term.

In areas of downward trend, range condition would be expected to decrease (see Vegetation Section, No Action alternative) with a corresponding decrease in livestock forage. While adjustments in livestock use would be expected, data is not available at this time with which to project the magnitude of grazing use adjustments. In the worst case, allotments with declining trend would decline in condition. Associated declines in available forage for livestock would possibly force some operators to reduce their herd numbers.

VEGETATION

1. Ecological condition and vegetation trend would decline in all four resource conflict areas in the long term.

The no action alternative would result in a significant adverse impact on ecological condition in all resource conflict areas. Changes in ecological condition and vegetation trend, by resource conflict area, would be as follows: North Shoshone (17 percent decline in condition, 15 percent decline in trend), South Shoshone (16 percent decline in condition, 2 percent decline in trend), Eureka (13 percent decline in condition, 20 percent decline in trend), and Southern Valley (18 percent decline in condition, 20 percent decline in trend.) The above noted changes in ecological condition and vegetation trend in the long term would be expected as a result of continuation of existing management in both the short and long term.

No action would be taken to reduce the competition for available forage between livestock, wild horses, and wildlife on portions of the resource area. Rangeland projects would only be implemented to solve site-specific problems, as necessary, to maintain existing management practices.

Existing management actions that can be attributed to bringing about these adverse impacts include the current heavy utilization of the vegetation resource by livestock, wild horses, and wildlife; historical periods-of-use; and the lack of allotment management plans. The resultant adverse impacts to ecological range condition and trend of vegetation communities for the above existing management actions are discussed below.

The adverse impacts to ecological range condition and vegetation trend in the long term would result from the existing use of the vegetation resource by livestock, wild horses, and wildlife.

The adverse impacts on vegetation from heavy stocking rates would result in deterioration of vigor and production of key management species, which would result in reduced range condition and/or total loss of certain species from individual vegetation communities. Cook, et. al., (1964) indicated in relation to effect of intensity of harvesting, without exception, the more of the herbage that is removed, the more plants died and the smaller were the remaining plants. Cook and Stoddard (1963) verified the harmful effects of increased grazing intensity when they stated that "Percent plants killed and percent reduction in crown cover increased with intensity of forage removal".

Based on the above discussion it is anticipated that the continued heavy utilization of the vegetation resource would cause further degradation of the ecological range condition and trend of vegetation communities, thus, heavy grazing intensity (overuse) would contribute to the significant adverse impact on ecological range condition and trend of vegetation communities in all resource conflict areas.

This deterioration would also be caused by the existing periods-of-use which allow early livestock turnouts (March and April) in most allotments. In addition, the majority of livestock permittees in the resource area are licensed for various periods of winter use, thus resulting in year-long livestock grazing. The following cited references are indicative of how the existing periods-of-use in the resource area would adversely impact the vigor of key management species in the Shoshone-Eureka Resource Area. Trlica et al. (1971), indicated that depletion of carbohydrate reserves is believed to be a primary factor for loss in plant vigor and subsequent range deterioration. Pearson (1964) indicated, "In the grasses this critical period begins with the boot stage and closes with complete maturation of the fruit." Also, Pearson (1964) suggested as root reserves are depleted, thus plants become highly susceptible to injury. The present periods-of-use would result in further losses of root reserves which would cause a continued decline in vigor. Declining vigor would result in further degradation of vegetation communities which would lower the range condition.

Based on the above cited references and discussion, the existing periods-of-use would contribute to the overall significant adverse impact of a declining ecological range condition and trend of vegetation communities in the resource area.

Currently there are 7 allotments with allotment management plans. However, the majority of these allotment management plans are not meeting the desired objectives for which they were established (e.g., increased ecological range condition by improving species composition, vigor, health, and reproduction). The remaining allotments would stay as they currently are without allotment management plans and associated grazing systems. These allotments currently exhibit distribution and overuse problems and have early spring turnouts of livestock which typifies heavy continuous livestock use. Kothmann, et. al., (1969) indicated from vegetation records kept on his study that heavy continuous grazing has resulted in a deterioration of the vigor and species composition of the vegetation resource. Laycock (1961) expressed that range condition remained essentially unchanged where grazing was continued in the same season as formerly. This would continue the present trend of downward ecological range condition.

2. Riparian vegetation would generally be maintained in its current condition class or decline.

Current resource uses would adversely impact riparian vegetation. It is anticipated that all of the riparian vegetation currently in poor condition would remain in poor condition and about 50 percent of riparian vegetation in excellent, good, or fair condition would decline one condition class in the short term in all resource conflict areas and the resource area as a whole. This would be a significant adverse impact. In the long term, approximately 80 percent of the riparian vegetation acreage would decline one condition class. The other 20 percent would remain in fair or better condition due primarily to limited livestock use. Table 4-13 shows projected riparian vegetation condition by resource conflict area for the long term.

CULTURAL RESOURCES

1. No cultural resource sites would receive the extra protection of wilderness designation.

Recommending all three wilderness study areas as nonsuitable for wilderness designation would not provide extra protection to an estimated 2,154 cultural resources sites.

2. Significant adverse impacts to cultural resources would result from continuing present management.

Harvest of woodland products at current levels would continue impacts to cultural resources at the same rate as in the past. There is insufficient data to quantify the specific rate of impacts but for every 71 acres of woodland harvested there is the potential for impacting at least one cultural resources site based on resource area-wide inventory data. If potential impacts are limited to 2,625 acres, 38 cultural resources would be impacted.

Authorizing livestock use at current levels would continue general impacts to cultural resources by livestock trampling at much the same rate as in the past. Livestock management has been, and would continue to be one of the most significant causes of detrimental impacts to cultural resources. If rangeland improvements continue at past rates, potential impacts to cultural resources would be approximately as follows: one site per 1.5 springs; one site per 3 miles of water pipeline; one site per 3 miles of fence; and one site per 250 acres of seeding.

The current rate of impacts to cultural resources by trampling would continue if wild horse use were managed at present levels. There is no specific data on the amount of damage to cultural resources by wild horses. However, all water-associated cultural resource sites in areas of concentrated horse use have been severely impacted.

Future wildlife management projects would result in impacts to cultural resources at the approximate rate of one site per 1.5 spring developments, one site per 3 miles of fence, one site per 10 guzzlers and one site per 84 acres of vegetative manipulation.

VISUAL RESOURCES

1. The visual impacts of utility transmission lines would not be confined to a network of corridors.

Failure to establish a network of utility corridors would result in an adverse effect upon the visual resource. Not confining utilities to a network of corridors would mean that they would be located on a by-case basis. If this procedure is followed, it is likely that utilities would not be located proximate to each other. Visual effects would thus occur over a larger area.

WILDERNESS

1. Wilderness values would not be protected on 152,160 acres, but not all wilderness values would be foregone.

Not designating the Antelope, Roberts, and Simpson Park wilderness study areas as wilderness would result in the wilderness characteristics in the Roberts area and the northern half of the Simpson Park area being lost during the long term as a result of the impacts of mineral exploration and potential development. This would be a significant adverse impact upon wilderness values. It is expected that the wilderness characteristics of the Simpson Park area and the Antelope area would generally still be present at the end of the long term as the probability of extensive impacts resulting from mineral exploration and development is much lower than for the other areas. For a discussion of the wilderness characteristics of each area refer to the Wilderness section of Chapter 3.

RECREATION

1. Hunting use would decline significantly.

Under this alternative it is expected that hunter days would decline approximately 25 percent due to reductions in game populations over the long term. Table 4-13 shows estimated hunter days under this alternative.

Recommending all three wilderness study areas as nonsuitable for wilderness designation would have no significant impact upon existing recreation use.

MINERAL EXPLORATION AND DEVELOPMENT

No impact to mineral exploration and development would occur under this alternative as no wilderness areas would be designated. Each of the three wilderness study areas would be available for mineral exploration and development. The Mineral Exploration and Development Section of Chapter 3 contains a discussion of the mineral potential of the Antelope, Roberts, and Simpson Park wilderness study areas.

ENERGY AND UTILITIES

1. Not designating any wilderness study areas as wilderness would benefit oil and gas leasing opportunities.

There would be no restrictions upon oil and gas leasing as no wilderness areas would be designated.

2. Utility companies would not benefit from utility corridor designation.

Failure to designate corridors would hinder planning efforts of utility companies contemplating construction of major transmission utitities through Nevada.

3. 7,695 cords of fuelwood would be available to the local population as an alternate energy source.

Noncommercial harvest of 7,695 cords of pinyon-juniper fuelwood over the 15-year implementation period would supply the local population with an alternate energy source equivalent to 1,066,527 gallons of fuel oil.

ECONOMIC IMPACTS

1. Land sales would not result in significant economic impacts.

Expression of interest for transfer of public lands to other ownership would continue to be considered on a case-by-case basis. However, without the encouragement of the specific management proposals provided under the other alternatives, it is expected that the present pattern of land ownership within the resource area woud remain substantially the same. The potential for economic development, or the possibility of realizing benefits that might derive from more efficient use of the land would be diminished.

2. An estimated $28,954 would be lost in area income as a result of a decline in recreation hunter days.

As wildlife habitat condition declines, so too would wildlife numbers, resulting in a loss of recreation hunter days. It is estimated that hunter days would decline from the 16,500 current use to 12,300, with an estimated loss in annual expenditures of $97,818 and loss in generated area income of $28,954.

3. Ranch wealth would decline.

No change in livestock use is proposed in this alternative. Existing data is insufficient to predict how future vegetation changes would affect availability of forage.

The no action alternative would perpetuate declining vegetation trend on portions of the resource area. In areas with declining trend, ecological condition would be expected to decrease with a corresponding decrease in livestock forage. With insufficient data available to project the magnitude of grazing use adjustments, the economic impacts of a forage reduction cannot be estimated. In the worst case, deterioration of the vegetation resource would result in a reduction in the number of licenseable animal unit months. This would force some ranchers to reduce their herd sizes or substitute alternative, and more expensive, feed sources. In addition to economic losses that might occur due to reductions in public grazing, permittees would realize a decline in capital value of ranches, or ranch wealth, of approximately $50 per animal unit month lost in loan or sale value.

SOCIAL IMPACTS

1. No significant change in local resident access to public land resources would occur.

2. The management actions proposed would not affect public safety or the viability of local organizations.

ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

This section, which applies to all four alternatives, identifies adverse impacts which would not be avoided after implementation of all planned mitigating measures. Mitigating measures are included among the standard operating procedures listed in Chapter 2.

VEGETATION

Land disposal actions, vegetative manipulations, and some woodland harvest activities would result in the unavoidable loss of native vegetation on disturbed areas. Impacts to native vegetation would be greatest in the economic development alternative and would be the smallest in the no action alternative.

WILDLIFE HABITAT

Land disposal actions and vegetative manipulation projects would result in the unavoidable loss of wildlife habitat. Land disposal actions with the greatest impact would be those made for agricultural, and community development purposes. Impacts to wildlife habitat would be greatest in the economic development alternative and smallest in the no action alternative.

WILD HORSES

Reductions in wild horse numbers as a result of gathering actions proposed under the economic development alternative would result in unavoidable adverse impacts to individual populations that are reduced to below 50 animals.

LIVESTOCK GRAZING

Under the protection alternative, livestock operators would be forced in the short term to reduce their herds, move to rental pastures, go out of the livestock business, or buy feed as a result of the reduction in stocking levels and proposed periods of use. Under all alternatives, except no action, short and long-term losses in available forage would directly result from land disposals.

CULTURAL RESOURCES

Although attempts would be made for data recovery or salvage of cultural resources, the damage caused by project construction would involve the literal destruction of these resources as they would cease to exist in their original context.

WILDERNESS

Existing wilderness values within the Roberts wilderness study area would be lost in the long term as a result of mineral exploration (and possible development) if the area is not designated as wilderness. Wilderness values within the northern half of the Simpson Park wilderness study area would not be maintained even with wilderness designation.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

This section, which applies to all four alternatives, identifies the trade-offs between short-term use and long-term productivity of the resources involved in the four alternatives. For this analysis, short-term impacts are assessed at the end of the first five years of plan implementation and long-term impacts are evaluated from five to fifteen years.

LAND OWNERSHIP

Land disposal actions would help to meet short and long-term community expansion needs, agricultural needs and would make lands available for commercial and industrial development.

VEGETATION

Vegetative manipulations, woodland harvest, and agricultural development (on lands transferred to other owership) would result in short-term disturbance to vegetation. In the long term, disturbed areas would become revegetated and would become more productive with improved growth, vigor, trend and condition.

WOODLAND AREAS

Harvesting of woodland products would result in an increase in the long-term productivity of the residual stand in areas where trees are removed in terms of growth, vigor, reproduction, trend, and condition. Understory vegetation would increase proportionately.

WILDLIFE HABITAT

Vegetative manipulation projects and land disposal actions would result in short and long-term losses of wildlife habitat.

LIVESTOCK GRAZING

Under the preferred and economic development alternatives, short and long-term improvements in productivity of available forage would result from allotment management plan implementation and associated projects. Under the protection alternative, initial short-term reductions in forage allocations together with allotment management plan implementation would result in long-term improvements in forage productivity; however, this forage would not be allocated to livestock. Under the no action alternative, short-term continuation of current management, with only limited project implementation, would result in long-term reductions in available forage for livestock.

WILDERNESS

In areas not designated as wilderness, consumptive short-term uses, such as mineral exploration and development, would be afforded the opportunity for growth. Areas designated as wilderness would be devoted to nonconsumptive long-term uses and the enjoyment of intangibles.

MINERAL EXPLORATION AND DEVELOPMENT

Wilderness management restrictions would create long-term adverse effects on mineral development and exploration.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

This section, which applies to all four alternatives, identifies the extent to which the four alternatives would irreversibly limit potential uses of the land and resources. Irreversible and irretrievable commitments of resources occur when a future course of action or use is foreclosed.

WILDLIFE HABITAT

Wildlife habitat lost through land disposal actions would be irreversibly and irretrievably lost.

CULTURAL RESOURCES

When cultural resources are salvaged prior to project implementation an irreversible and irretrievable commitment of the resource is made. Cultural resources are nonrenewable and once salvaged cannot be replaced.

WOODLAND AREAS

Wilderness designation would result in the irreversible and irretrieveable loss of woodland harvest potential within the wilderness study area.

WILDERNESS

Not designating the Roberts wilderness study area and the northern half of the Simpson Park wilderness study area would result in an irreversible and irretrievable loss of wilderness values in those areas due to probable impacts from mineral exploration.

MINERAL EXPLORATION AND DEVELOPMENT

Wilderness designation would irreversibly and irretrievably limit mineral exploration and development opportunities within the wilderness study areas.

CHAPTER 5

LIST OF PREPARERS

A. Neal Brecheisen, Area Geologist. B.S. Geology, University of Nevada at Las Vegas. Three and one-half years experience with the Bureau of Land Management. Contributed to the minerals portion of the wilderness study.

Shirley R. Brecheisen, Public Affairs Specialist. B.A. English Literature, University of Nevada at Las Vegas. Three years experience with the Bureau of Land Management. Responsible for the consultation and coordination section, the index, and public participation phases of the planning process.

Mark H. Davis, Wildlife Biologist. B.S. Biology and General Science and M.S. Wildlife Management, University of Wisconsin, Stevens Point. Two and one-half years experience with the Bureau of Land Management. Contributed to the wild horse and wildlife habitat management sections.

Jack T. Matuska, District Forester. B.S. Forestry, Syracuse University. Four years experience with the Bureau of Land Management. Two years experience with the U.S. Forest Service. Responsible for woodland products.

Roberta McGonagle, District Archaeologist. BA and MA, Anthropology, University of California at Davis; PhD, Archaeology, University of Missouri. Seven years experience with the Bureau of Land Management. Responsible for Cultural Resources analysis.

Nadine J. McKinlay, Secretary. Three years experience with the Bureau of Land Management. Responsible for operation of the AMtext word processor and cover page artwork.

Paul E. Myers, Regional Economist. B.S. Economics, University of Nevada, Reno. Three years experience with the Bureau of Land Management. Eleven years experience in economics. Responsible for economic sections.

Paul C. Pawlowski, District Realty Specialist. B.S. Forestry, Rutgers University. Three and one-half years experience with the Bureau of Land Management. Contributed to land tenure adjustments and utility and transportation corridors.

Robert A. Peak, Cartographic Technician. Five and one-half years experience with the Bureau of Land Management. Responsible for all cartographic functions for the resource management plan.

C. Dwayne Sykes, District Wildlife Biologist. B.S. Wildlife Science, New Mexico State. Seven years experience with the Bureau of Land Management. Responsible for wild horse use and wildlife habitat management.

John P. Spehar, Area Range Conservationist. B.S. Forestry with a minor in Range Management, University of California at Berkley. Four years experience with the Bureau of Land Management. Responsible for livestock use.

Mary G. Von Koch, Realty Specialist. B.S. Food Technology, University of California at Davis; M.S. Food Science and Human Nutrition, Michigan State University. Two and one-half years experience with the Bureau of Land Management. Responsible for land tenure adjustments, utility and transportation corridors, and technical coordination.

Russell W. Von Koch, Team Leader. B.A. Rhetoric, University of California at Davis; M.S. in Forestry, University of Washington at Seattle. Four years experience with the Bureau of Land Management. Responsible for overall preparation of the resource management plan.

Allen A. Voss, Natural Resouces Specialist. B.S. Natural Resource Management, Lincoln University of Missouri. Two and one-half years experience with the Bureau of Land Management. Responsible for the visual resources, recreation, and wilderness portions of the resource management plan.

Craig L. Westenburg, District Hydrologist. B.S. Watershed Management, University of Arizona. Two and one-half years experience with the Bureau of Land Management. Responsible for air quality, water resources, and soils.

CHAPTER 6

CONSULTATION AND COORDINATION

PUBLIC INVOLVEMENT

A notice of intent to commence land use planning for the Shoshone-Eureka Resource Area was published in the Federal Register in March of 1981. During April of 1981 a news release announced the beginning of the issue identification phase of the resource management plan. It explained the purpose of the plan and the manner in which the public could participate in the planning process. Four open houses provided the public with an opportunity to discuss the planning process and identify issues. They were held: May 4 in Battle Mountain with an attendance of nine, May 5 in Austin with an attendance of seven, May 6 in Eureka with an attendance of thirteen, and May 7 in Reno with an attendance of four.

The Battle Mountain District Advisory Council (a 10-member group of citizens representing such interests as ranching, wildlife, mining, elected government, environmental preservation, and the public at large) was briefed about the process at its October 1980 meeting.

In April of 1981, Bureau personnel met with the Te Moak Indians in Battle Mountain, the Yomba Indians in Austin, and the Te Moak Indians in Lee to identify their concerns.

Bureau personnel met with the commissioners of Eureka, Lander, and Nye counties at their regular meetings in April of 1981. The commissioners were informed about the planning process and asked to indentify their concerns.

A newsletter explaining the scope and purpose of the Shoshone-Eureka Resource Management Plan was issued during the first half of 1981 and mailed to approximately 200 individuals, organizations and agencies. It included a list of potential issues and specified procedures for public participation. A 45-day formal comment period regarding the potential issues began April 20, 1981 and ended June 5, 1981.

A letter explaining the results of issue identification was sent to individuals and organizations on the mailing list in December of 1981. It included a discussion of planning criteria and invited the public to review the draft criteria.

From November of 1982, until January 10, 1983, the Battle Mountain District solicited input from the public concerning a set of preliminary alternatives. An informational letter describing the draft alternatives was mailed to over 250 individuals, organizations, and agencies in November. A notice of intent to develop alternatives was also published in the Federal Register in November, 1982. A news release announcing open houses and a comment period was issued the first of December, 1982. The comment period was held from December 1, 1982, to January 10, 1983. Two open houses were held each day in Battle Mountain on December 7, 1982, in Eureka on December 8, 1982, and in Reno on December 9, 1982. Twenty-five letters or comment forms were received as a result of this public involvement effort. A number of modifications were made to the alternatives based on comments from the public.

The comments received concerning the preferred resource management plan and the alternatives will be addressed in the final resource management plan. The most useful comments will be those that clearly state opinions and give reasons for those opinions. Copies of the Shoshone-Eureka Draft Resource Management Plan are available to those interested in receiving the plan. A news release has been issued to inform the public about the availability of this document. Comments have been requested from the following agencies, interest groups, and individuals.

CONGRESSIONAL

Senator Chic Hecht
Senator Paul Laxalt
Congressman Harry Reid
Congresswoman Barbara Vucanovich

FEDERAL AGENCIES

- Advisory Council on Historic Preservation
- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Defense
  - Department of the Air Force
- Department of Energy
- Department of the Interior
  - Bureau of Indian Affairs
  - Bureau of Mines
  - Bureau of Reclamation
  - Geological Survey
- Environmental Protection Agency
- Fish and Wildlife Service

STATE AGENCIES

Office of the Governor, Nevada
Nevada State Clearinghouse--25 copies for distribution to State Agencies
Nevada Department of Wildlife
Legislative Counsel Bureau

LOCAL AGENCIES

Eureka County Commissioners
Lander County Commissioners
Nye County Planner

UNIVERSITY OF NEVADA

Max C. Fleischmann College of Agriculture Cooperative Extension Service
Division of Agricultural and Resource Economics
Division of Animal Science
Division of Renewable Natural Resources
Desert Research Institute, Las Vegas and Reno
Mackay School of Mines
Nevada Bureau of Mines and Geology

NEVADA STATE LEGISLATORS

Richard E. Blakemore
Norman Glasser
John Marvel
Kenneth K. Redelsperger

OTHERS

American Horse Protection Association, Inc.
Audubon Society, Lahontan Chapter
Camp Fire Club of America
Center for Action on Endangered Species, Inc.
Desert Fishes Council
Desert Protective Council, Inc.
Environmental Action, Inc.
Foresta Institute

Grazing permit holders within the Shoshone-Eureka Resource Area
International Society for the Protection of Mustangs and Burros
National Council of Public Land Users, Colorado
National Rifle Association of America
National Trappers Association, Inc.
National Wildlife Federation
Nationwide Forest Planning Clearinghouse
Natural Resources Defense Council
Nature Conservancy
Nevada Cattlemen´s Association
Nevada Outdoor Recreation Association/National Public Lands Task Force
Nevada Wildlife Federation
North American Falconers Association
Northern Nevada Native Plant Society
Pacific Legal Foundation
Private citizens who have participated in the planning process
Private citizens who have requested a copy of the plan
Public Lands Council
Sierra Club
Society of American Foresters
Society for Range Management
Wilderness Society
Wild Horse Organized Assistance
Wildlife Management Institute
Wildlife Society, Nevada Chapter

Copies of the plan are available at the following Bureau of Land Management District and State Offices.

BUREAU OF LAND MANAGEMENT OFFICES

Office of Public Affairs
Bureau of Land Management
18th and C Streets
Washington, D.C. 20240

Nevada State Office
300 Booth Street
P.O. Box 12000
Reno, Nevada 89520

Battle Mountain District Office
North 2nd and Scott Streets
P.O. Box 194
Battle Mountain, Nevada 89820

Carson City District Office
1050 East Williams Street
Carson City, Nevada 89701

Elko District Office
2002 Idaho Street
Elko, Nevada 89801

Ely District Office
Star Route 5, Box 1
Ely, Nevada 89301

Las Vegas District Office
4765 West Vegas Drive
Las Vegas, Nevada 89102

Winnemucca District Office
705 East 4th Street
Winnemucca, Nevada 89445

PUBLIC LIBRARIES

Churchill Public Library
553 South Main Street
Fallon, Nevada 89406

Clark County Library
1401 East Flamingo Road
Las Vegas, Nevada 89121

Elko County Library
720 Court
Elko, Nevada 89801

Esmeralda County Library
Goldfield, Nevada 89013

Eureka County Library
Eureka, Nevada 89316

Lander County Library
Battle Mountain, Nevada 89820

Mineral County Library
1st and D Streets
Hawthorne, Nevada 89415

Nevada State Library
Library Building
Carson City, Nevada 89710

Nye County Library
Tonopah, Nevada 89049

University of Nevada, Las Vegas
James R. Dickinson Library
4505 Maryland Parkway
Las Vegas, Nevada 89154

University of Nevada, Reno
Getchall Library
Reno, Nevada 89507

Washoe County Library
1301 South Center Street
Reno, Nevada 89505

White Pine County Library
City Hall
Ely, Nevada 89301

HEARINGS

The dates and times for public hearings will be announced in advance through the news media and in the Federal Register.

APPENDIX A

SUPPLEMENT TO LIVESTOCK GRAZING

CRITERIA FOR CATEGORIZATION OF ALLOTMENTS UNDER THE SELECTIVE MANAGEMENT POLICY

Resource area range specialists and members of the planning team proposed selective management criteria for categorization of allotments and prioritization of work effort. The proposed criteria were presented to the public during three informal range management workshops held in Battle Mountain, Austin, and Eureka, Nevada. The Rangeland Management Policy and the concept of the selective management approach were also explained. Copies of the criteria were made available to the public at the workshops. Public comments and recommendations were incorporated into the criteria. The criteria in this appendix are the approved criteria for the resource area.

In applying the criteria, the management situation in each allotment was compared with the criteria and an overall ranking was given to the allotment. A general narrative explains the logic behind the categorization of each allotment. The initial categorization was completed to provide the planning team with a tentative list of allotments which could be used during alternative formulation. The categorization was completed with a limited amount of current data. Vegetation studies, soils data, livestock permittee case file information, and the resource area files were all used where available. The team members relied heavily upon their knowledge of the current situation within each allotment. As additional vegetation data becomes available, it will be used to refine the categorization of the allotments. Conflicts brought out during allotment evaluation were considered during initial categorization. Additional conflicts or conditions identified may warrant re-evaluation of allotments.

In January, 1983, copies of the initial allotment categorization results and the criteria were sent to the livestock permittees for comment. The selective management criteria are presented in the following section.

Shoshone-Eureka Resource Area
Final Criteria for Categorization Of Allotments into the Selective Management Categories

Evaluation of the criteria for ecological condition, ecological range site potential, and range trend has been completed by the team using currently-available resource area data and professional judgement to arrive at an interim category determination for each allotment. A more intensive evaluation of the allotment will take place as data is made available through the Shoshone-Eureka Resource Area Monitoring Program. At the time sufficient monitoring data becomes available, the condition, potential, and range trend criteria will be evaluated as follows:

1. Ecological Condition

Estimated ecological range condition, developed on key area range sites, as base data for the Shoshone-Eureka Resource Area monitoring program.

Maintain category - good to excellent
Improve category - poor to fair
Custodial category - present ecological condition is not a factor in placing an allotment into Category C provided the condition is stable or static.

2. Ecological Range Site Potential

The normal years´ potential production (lbs/acre current year´s growth) for all the range sites containing key area studies in an allotment will be averaged in proportion to the size of each key area range site.

Maintain - Vegetation types have the capability of increased production.
Improve - Vegetation types have the capability of increased production.
Custodial - Vegetation types do not have the capability of increased production.

3. Range Trend

Trend data will be used as a criteria for initial allotment categorization where sufficient data is available from existing studies.

Maintain - Static or improving
Improve - Declining or static
Custodial - Static or improving

4. Economic Investment Potential

Maintain - Medium to high potential may exist for positive economic return of public investments.
Improve - High potential exists for positive economic return of public investments.
Custodial - Low potential exists for positive economic return on public investments.

5. Social-Political Controversy or Interest

Maintain - The degree to which controversy or interest conflict with present management must be low.
Improve - The degree of conflict must be moderate to high.
Custodial - The degree of conflict must be low.

This criteria includes possible conflicts of major importance such as water rights, land claims, proximity to town sites, and major wilderness interest.

6. Present Management

Maintain - Present management implemented and meeting resource management objectives; no major revisions necessary.
Improve - Resource management objectives not being met; allotment in need of an AMP or grazing system; major revision of existing AMP needed.

Custodial - Present resource management appears satisfactory or is the only logical practice considering all other criteria.

7.

Range Improvements

Maintain - Range improvements have been completed and are meeting resource management objectives. Additional range improvements may be required to fully implement existing systems.

Improve - Additional range improvements are required to meet management objectives.
Custodial - Range improvements have been completed and are sufficient to meet resource management objectives or range improvements are not required to meet resource management objectives.

8.

Resource Conflicts

Critical wildlife habitat, wild horse and burro/livestock use areas, recreation, water rights, mining, lands actions, A.C.E.C., reintroduction of plants and animals, soil, water, and air quality.

Maintain - An interdisciplinary team will be used to determine the effect a limited number of the above mentioned criteria will have on present grazing management.
Improve - One or more major conflicts must be present.
Custodial - Same as Maintain.

9. Allotment Statistics

Acreage, land status, number of permittees, amount of trespass, and presence or absence of unfenced private land exchange-of-use agreements.

Maintain - It is necessary to have cooperation established with the majority of the private landowners and the majority of the private lands must be under exchange-of-use agreements. The allotment size does not apply. There should not be a significant history of prior trespass.
Improve - Land status exchange-of-use agreements and size are not prohibitive factors for future management practices or there is a history of prior trespass.
Custodial - Mixed land status prohibits intensive management and land exchanges are not feasible. There should not be a history of prior trespass. Allotment size impedes intensive grazing management.

10. Funding and Manpower Capablity

Maintain - Implementation of more intensive grazing management and further development of range improvements is not feasible as compared to other allotments considering constraints of 10-year projections of funding and manpower availability.

Improve - Implementations of more intensive grazing management and further development of range improvements must be feasible as compared to other allotments considering constraints of 10-year projections of funding and man power availability.

Custodial - Same as Maintain.

Shoshone-Eureka Resource Area
Proposed Allotment Categorization

Improve Category

Clear Creek
Roberts Mountain
Diamond Springs
Buffalo Valley
Tierney Creek
Mt. Airy
Fish Creek Ranch
Carico Lake
Gilbert Creek
Romano

Maintain Category

Willow Ranch
San Juan
O´Toole Ranches
Willow Racetrack
J.D.
Washington Creek
Ruby Hill

Custodial Category

Three Mile
Mahattan Mountain
Austin
Fish Creek (west)
Seven-Mile
Simpson Park
Underwood
Grass Valley
S. Smith Creek
Santa Fe Ferguson
Porter Canyon
Copper Canyon
Black Point
Shannon Station/ Spanish Gulch
Flynn Parmann
Potts
Arambel
Sweeney Wash
Kingston
Wildcat Canyon
Lucky C.
Argenta
Dry Creek
North Diamond
Snowball
Corta
Duckwater
Hicks Station
Trail Canyon
Millet Ranch
Nielsen Indiv.

GRAZING TREATMENTS

Livestock grazing allotment management plans prepared as part of the short-term and long-term actions for the preferred resource management plan and the alternatives would include one of the grazing treatments described in this section. Grazing treatments are designed to improve the rangeland vegetation by providing the key management species with a period of uninhibited growth. Incorporating the various grazing treatments into a rotation, rest, or deferred grazing system allows the manager to manipulate livestock grazing in order to meet the growth requirements of the key species and break up a pattern of continuous use. Absence of livestock during the critical growth period gives the plants an opportunity to increase in density, composition, vigor, and production. The following grazing treatments, singly or in various combinations, would be combined with scheduled grazing to form management systems on allotments in the Shoshone-Eureka Resource Area.

Treatment 1: Defer livestock grazing from early spring to late spring (approximately April 1 to June 15) This treatment would allow plants to increase in vigor, litter, seed production, and seedling establishment. The following key species would benefit from this treatment: squirreltail, needle-and-thread, Indian ricegrass, crested wheat, Great Basin wildrye, blue bunch wheatgrass, bud sage, and spiny hopsage.

Treatment 2: Defer livestock grazing from late winter to late summer (approximately March 1 to September 15) This treatment would provide the same benefits as treatment 1, but to plants which have a longer growing season. The following key forage species would benefit from this treatment: Great Basin wildrye, galleta grass, alkali sacaton, alkali cordgrass, winterfat, fourwing salt bush, black sagebrush, and shadscale.

Treatment 3: Complete rest for one full year from late winter to late winter (approximately March 1 to March 1) This treatment would provide the plants with a full year of uninhibited growth. All plants would benefit through increased size, vigor, and production and storage of nutrients required for future growth and seed production.

Treatment 4: Livestock grazing from midsummer to fall (approximately July 15 to November 1) This treatment would provide better seed dispersal and trampling. When coupled with other treatments that allow spring rest the following year, increased seedling establishment would result.

Treatment 5: Defer livestock grazing from late winter of the first year to midsummer of the following year (16 months rest from approximately March 1 to July 15) This treatment would benefit all key management species especially riparian areas and mountain browse shrubs by promoting seed production on two-year-old woody growth in the second year and by providing for trampling of seed. Two growing seasons of rest would allow the other key management species to increase vigor, litter accumulation, seed production, and seedling establishment.

Treatment 6: Defer livestock grazing two months in the spring (dates vary by allotment) This treatment would be designed to help meet the need of key species in areas not presently proposed for allotment management plan development. Increased vigor of all key species would be favored by this treatment. The exact time of spring rest would vary by allotment.

RANGE IMPROVEMENTS

The types of range improvements proposed in the preferred resource management plan and the alternatives are described below.

Springs: Spring development would consist of excavating the spring source and installing a cylindrical corrugated metal pipe headbox (approximately 3 feet in diameter by 3 feet high) to collect water which would then be piped to a trough. The pipe is usually of 1.25 inch diameter plastic and is normally buried. Sufficient water would be left at the original spring for wildlife and to insure that the meadow would not dry up. Overflow water from the trough would be piped back to the original drainage course. The spring would be fenced for protection of soil and vegetation. Each spring development would disturb about 0.5 acre. If the spring is located in a wilderness study area, design consideration will be given to recreational use.

Water: Troughs, an integral part of all proposed water systems, usually consist of either an 18-foot diameter circular concrete base with metal sides or a 12-foot by 3-foot (Powder River type) rectangular metal structure. All troughs would include a ramp so that small birds and mammals could escape. Construction would disturb approximately 0.2 acre per trough.

Wells: Well construction would consist of drilling and casing a hole to the aquifer. Pump facilities would include either a gasoline engine and pumpjack, an electric submersible pump, or a windmill. Motorized pump facilities would generally be located in a small protective shed over the well head. The facility could be designed with a water storage tank. Construction would disturb about 0.5 acre per well site for motorized pump facilities and about 1 acre per well site for windmill pump facilities.

Reservoirs: Reservoirs of two basic types would be constructed: dike or retention dams and pit-types. The dike-type reservoir is generally placed on drainages. Construction would consist of moving fill material immediately above the dike or from a nearby source to create a dam structure. A spillway would be provided for overflow.

Pit-type reservoirs would be constructed on shallow drainages, basins, or dry lakebeds. Construction would consist of digging a pit to a predetermined size, depending on surface water availability.

Ideally, reservoirs should be large and deep enough to hold water throughout the grazing season. Size could vary from one acre (1.5 total acres disturbed) to five acres surface area (seven total acres disturbed). The average reservoir would contain approximately eight acre-feet of water, with a depth of 10 feet when full.

Pipelines: Pipelines would carry water from wells to seedings or other areas that lack an adequate water supply. Generally 1.5 to 2.5 inch diameter plastic pipe would be buried with a pipe-laying device consisting of a modified ripper tooth mounted on a tractor. The pipe is normally laid 30 inches below the surface. Water troughs would be installed approximately every mile along the pipeline. Approximately one acre per mile would be disturbed during construction.

Fences: Fencing is proposed to facilitate implementation of grazing systems and to protect riparian habitat. Where major antelope migration routes occur, fences would be constructed according to Bureau of Land Management specifications for antelope passage. Approximately one acre per mile would be disturbed by fence construction.

Cattle Guards: Cattle guards would be located where fences cross roads where traffic warrants. These would generally be 8 feet wide and 12 to 24 feet in length, depending upon traffic type and pattern.

Land Treatments: Vegetation manipulation would be accomplished by various methods, examples include: (spraying, burning, chaining, plowing and brush beating). Treatment methods are determined by vegetation composition and age class, soil surface characteristics, terrain, slope, precipitation, conflicts with other resources, cost effectiveness, and legal constraints.

After treatment, a rangeland drill or aircraft would be used to artificially seed the area with high-value introduced forage species adapted to local conditions. The area would then be rested until seedlings are firmly rooted to resist pull-up from grazing.

Spraying: Chemical control of sagebrush usually consists of spraying the plants with 2,4-D from an airplane or ground application. Spraying decreases shrub competition while preserving existing grasses, but it also affects forbs and desirable shrubs. Spraying is the most effective technique for killing sagebrush. It leaves the grass seedbed undisturbed and creates a better environment for subsequent drilling and seed germination, and it minimizes soil erosion.

Burning: Prescribed burning is the carefully-planned use of fire to control unwanted vegetation. Burning is often the most inexpensive treatment method and is widely applicable. However, it requires sufficient fuel and can only be used during ideal conditions (i.e., temperature, humidity, wind, etc.). If fuels are sparse or patchy, burning can leave some areas untreated. Burning also carries the risk of wildfire. However, with careful planning and application, this risk can be minimized.

Chaining: Chaining consists of dragging a large anchor chain between two tractors. This method is inexpensive and does not appreciably damage grasses and forbs. However, chaining does not kill as many shrubs as other methods.

Plowing: Plowing consists of pulling a heavy duty, multiple-disk plow through the soil, destroying 90 to 95 percent of the shrub cover but also most of the desirable grasses and forbs. Plowing is more precise than other methods for leaving untreated areas within or adjacent to treated areas, but it is more expensive, causes greater ground disturbance, and cannot be used in rough rocky areas.

Brush Beating: Brush beating is accomplished with a special machine similar to a large rotary lawn mower, except chains are used instead of blades. The machine is normally pulled behind a tractor. This method destroys older big sagebrush plants while leaving grasses and forbs intact. Brush beating is a precise method for leaving untreated areas within or adjacent to treated areas. It also leaves a mulch of chopped plant material on the soil surface. However, this treatment method is more costly and time-consuming than other methods and cannot be used in extremely rocky areas.

Wildlife Habitat Improvements

Guzzlers: Guzzlers are precipitation gathering and storing devices. Rain and snow are collected on a metal apron and drained into a combination drinking trough/storage tank. The storage capacity is usually 750-1,000 gallons. Guzzlers are usually designed for use by game birds and other small animals. However, larger facilities with up to 5,000 gallon storage capacity may be constructed for large animal use, particularly big game such as mule deer and pronghorn antelope. Guzzlers are fenced to prevent livestock use or damage, and to provide an area of undisturbed habitat immediately around the water.

Instream Structures: Instream structures are primarily gabions, rock or log check dams placed in streams and ephemeral water courses to slow water flow and diminish erosion. Structures placed in flowing streams would also be designed to form splash pools below the dams or gabions to improve fish habitat.

APPENDIX B
BASIS FOR ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS

DETERMINATION OF SIGNIFICANT IMPACTS

Appendix B defines the thresholds used to identify significant impacts resulting from management actions. Thresholds have been established for relevant components of the affected environment. When an environmental impact exceeds a specified threshold, that impact becomes significant. Impacts can be either beneficial or adverse, depending upon the effect on a particular component of the existing environment. The following thresholds are based upon the professional judgement of the planning team.

Affected Resource	Measurement Parameters	Critical Threshold or level of significance[1]
A. Vegetation	Effect on the ecological condition and vegetation trend within the resource conflict areas	Any action which would change vegetation condition by one condition class on 10 percent or more of a resource conflict area
		Any action which would cause a change in trend on ten percent or more of a resource conflict area
	Effect on condition of riparian vegetation	(-) Any action maintaining riparian vegetation in less than good condition
		(+) Any action improving or maintaining 10 percent of riparian vegetation in any one resource conflict area in good or better condition
B. Woodland Areas	Effect upon harvest base	(-) Any action or combination of actions which would remove 1 percent or more of the resource area´s accessible harvest base from production of woodland products
	Effect on availability of woodland products	(-) Any action which would prevent meeting public demand for woodland products

APPENDIX B: BASIS FOR ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS (continued)

Affected Resource	Measurement Parameters	Critical Threshold or level of significance
C. Wildlife Habitat	Effect on crucial wildlife habitat (i.e., riparian areas, key seasonal use areas, strutting grounds, aquatic habitat, etc.)	(-) Any action maintaining present habitat at fair or poor condition, or any action that would decrease 10 percent of habitat by one condition class
		(+) Any action that would maintain habitat at good or better condition or any action increasing 10 percent of habitat one condition class or more
	Effect on availability of forage for reasonable numbers of big game	(-) Any action that would result in the loss of 10 percent of a particular habitat or use area resource area-wide or within one resource conflict area
		(-) Any action which would result in the inability to provide sufficient forage for reasonable numbers of big game
		(+) Any action which would result in the provision of forage for reasonable numbers of big game if previously inadequate
D. Wild Horses	Effect on general well being of the population	Any action which results in a 5 percent or greater change from current numbers of wild horses in a herd use area
		(-) Any action which reduces wild horse numbers to fewer than 50 animals in a herd use area
		(-) Any action which results in the loss of an area which constituted wild horse habitat in 1971
		Any action which results in the enhancement or elimination of existing animal characteristics, qualities or traits within each wild horse use area

APPENDIX B: BASIS FOR ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS (continued)

Affected Resource	Measurement Parameters	Critical Threshold or level of significance
D. Wild Horses (continued)	Effect on free-roaming character	Any action which results in the enhancement of or interference with the normal distribution and movement patterns of wild horses within a herd use area
E. Livestock Grazing	Effect on availability of forage for livestock within a resource conflict area or the resource area	Any action that would cause a 10 percent or greater change in livestock grazing from the last five-year average level of use
F. Cultural Resources	Effect on cultural resources	(-) Any action which would result in disturbance of any cultural resource site
G. Wilderness (WSAs)	Effect on availabillity of high quality wilderness values	(-) Any action which would result in the loss of wilderness values to development
		(+) Any action which would result in the long-term preservation of wilderness values
H. Recreation	Effect on dispersed recreation opportunities	(-) Any action which would result in a decrease in the availability of dispersed motorized recreation opportunities by more than 10 percent
		(-) Any action which would result in a decrease in the availability of dispersed non-motorized recreation opportunities by more than 10 percent
		Any action which would result in a 10 percent or greater change in recreation use in any one activity

APPENDIX B: BASIS FOR ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS (continued)

Affected Resource	Measurement Parameters	Critical Threshold or level of significance
I. Mineral Exploration and Development	Effect on exploration or development of minerals	(-) Any action which would result in additional restrictions on exploration or development of minerals
		(+) Any action which would increase the opportunity to explore for and develop minerals on the public lands
J. Energy and Utilities	Effect on energy exploration, development or production (geothermal, oil, gas, and fuelwood)	(-) Any action which would result in additional restrictions upon energy exploration, development, or production
		(+) Any action which would increase opportunities to explore for and develop energy resources
	Effect on bulk transfer of energy through the resource area.	(+) Any action which would facilitate the granting of a right-of-way
		(+) Designation of corridors for transmission of utilities through the resource area
K. Economics	Effect upon ranch income	a 5 percent change in net ranch income for any ranch size group
	Effect upon ranch wealth	a 10 percent change in ranch wealth
	Effect upon employment and sales within the resource area by economic sector	a 5 percent change in the employment or sales of any sector
	Effect upon total employment within the resource area	a 1 percent change in total resource area (Lander and Eureka counties) employment

APPENDIX B BASIS FOR ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS (continued)

Affected Resource	Measurement Parameters	Critical Threshold or level of significance[1]
L. Social	Effect upon social conditions	Any action which would cause a 5 percent beneficial or adverse change from the existing situation in the population mixture, availability of jobs, or income within the resource area
		(-) Any change that would deny local residents access to public land resources upon which they are now dependent
		(-) Any action which would endanger public safety
		(-) Any action which would cause local organizations to lose their viability

---

[1] (-) = threshold for an adverse significant impact
(+) = threshold for a beneficial significant impact

APPENDIX C

AQUATIC AND RIPARIAN HABITAT

Aquatic and streamside riparian habitat conditions were determined from data collected during stream surveys conducted in the resource area in 1979. Approximately 90 percent of the pernnial streams on Bureau of Land Management-administered land in the resource area were surveyed. The surveys followed procedures in the Nevada State Office Supplement (Release NSO 6-38, dated 01/25/78) to Bureau Manual Section 6671. Non-streamside riparian habitats were evaluated during wildlife habitat inventories conducted in 1980 and 1981. These inventories concentrated on "special habitat features" which include springs, seeps, wet meadows, small upland meadows, small groves of trees and other features and were conducted according to Bureau Manual Section 6602.

The stream surveys evaluated several parameters for both instream and stream bank conditions. Two paramters, bank cover and bank stability were used to rate streamside riparian habitat condition. The ratings for the two parameters were averaged for each stream giving an overall rating which is expressed as a percentage of the optimum, that being the theoretically perfect condition, or 100 percent. These percentage ratings were placed in a condition class as follows: 70 percent and above, excellent; 60 to 69 percent, good; 50 to 59 percent, fair; and 49 percent and below, poor.

Aquatic habitat condition was determined in a similar manner, but based on five parameters: pool-riffle ratio, pool quality, stream bottom desirable material, bank cover, and bank stability. The five ratings for each stream were averaged to get an overall rating of aquatic condition, also expressed as a percentage of optimum. These ratings were placed in condition classes as above.

Following is an example of how the process worked for each stream:

Trout Creek - Pool riffle ratio, percent optimum - 23
Pool quality, percent optimum - 0
Stream bottom, percent desirable material - 93
Bank cover, percent optimum - 65
Bank stability, percent optimum - 72
Total 253

Average = 51 percent of optimum, or fair condition aquatic habitat.

Riparian habitat: Bank cover, percent optimum - 65
Bank stability, percent optimum - 72

Average = 69 percent of optimum or good condition riparian habitat.

Aquatic and streamside riparian habitat condition by resource conflict area is shown in Table 3-1 in Chapter 3. Streamside riparian acreage is incorporated into the totals shown for each resource conflict area.

In 1980 and 1981, 375 wetland/riparian (non-streamside) features were inventoried. Each feature was evaluated for its current habitat condition. Hazard and habitat conflicts were documented. Areas were judged to be significantly damaged, slightly damaged or undamaged. Sixty percent of the areas inventoried were significantly damaged or in less that good condition.

Since the original inventories were not done by resource conflict area, the amount and condition of riparian habitat was estimated for each resource conflict area. These amounts are incorporated into the totals shown for each resource conflict area in Table 3-1.

Analysis Assumptions

Some analysis assumptions were made in order to project riparian and aquatic habitat condition changes under the various alternatives.

1. Riparian and stream habitat not proposed for improvement would continue to decline at the present rate. Projecting these rates into the future, it is expected that in the short term 50 percent of the existing habitat in fair or better condition would decline to the next lower condition class. In the long term, 80 percent of the habitat in fair or better condition at the end of the short term would decline one condition class.

2. With implementation of an improvement program, 70 percent of the target areas would improve to good condition in the short term. In the long term, all areas being improved would reach good condition.

GLOSSARY OF TERMS

active preference: The total number of animal unit months that can be licensed.

allowable harvest (cut): The amount of firewood, number of Christmas trees or number of juniper posts which can be harvested on an annual basis consistent with the principle of sustained yield.

allotment: An area designated for the use of a prescribed number and kind of livestock under one plan of management.

allotment management plan (AMP): A documented program which applies to livestock operations on the public lands, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: 1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for the public lands through land use planning; 2) describes the type, location, ownership, and general specifications for the range improvements to be installed and maintained on the public lands to meet the livestock grazing and other objectives of land management; and 3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

animal unit month (AUM): The amount of forage necessary for the sustenance of one cow or its equivalent (e.g. 5 sheep, 4 deer, 5 antelope, 5 bighorn sheep, 1.25 elk, or 1 horse) for one month.

chaining: The process of knocking over, for the purpose of extirpation, pinyon and juniper trees and sagebrush by means of dragging an anchor chain between two large tractors.

cherry-stemmed road: Dead-end road into a wilderness study area which forms a part of the boundaries of that wilderness study area, "closed" to off-road vehicle use.

corridor: A passageway through which all utility, transmission (powerlines, gas pipelines, etc.) and transportation (roads, railroad) facilities, both existing and proposed, are located.

critical growth period: The period in a plant´s growth cycle when food reserves are lowest and grazing is most harmful.

crucial wildlife habitat: Habitat essential to all or a portion of an animal´s life cycle without which populations of that animal species would be reduced or eliminated.

cultural resources: Those fragile and nonrenewable remains of human activity, occupation, or endeavor, reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features, that were of importance in human events. These resources consist of: 1) physical remains in areas where significant human events occurred--even though evidence of the event no longer remains, and 2) the environment immediately surrounding the resource.

cultural resources sites: A physical location of past human activities or events. Cultural resource sites are extremely variable in size and they range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features. Prehistoric and historic sites which are recorded as cultural resources have sociocultural or scientific values and meet the general criterion of being more than 50 years old.

forage: All browse and herbaceous foods that are available to grazing animals. It may be grazed or harvested for feeding.

forb: A nongrass seed-producing plant that does not develop persistent woody tissue.

forest land: All lands which support trees having a ten percent or greater crown closure, now or potentially. This includes woodlands, commercial forest land, noncommercial forest lands, and productive forest lands, provided the minimum crown closure standard is met.

grazing preference: The total number of animal unit months of livestock grazing on public lands, apportioned and attached to base property owned or controlled by a permittee or lessee.

grazing system: A systematic sequence of grazing use and nonuse of an allotment to reach identified multiple-use goals or objectives by improving the quality and quantity of the vegetation.

grazing treatment: Under a grazing system, grazing or resting a particular unit of land (usually a pasture) at a particular time each year to attain particular vegetative goals.

guzzler: An artificial water source developed for use by small animals.

habitat management plan: A written and officially approved plan for a specific geographic area which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

herd management area plan: A written program of action designed to protect, manage and control wild and free-roaming horses and burros to maintain a natural ecological balance on the public lands.

hunter day: One hunter spending 12 hours hunting or 12 hunters spending 1 hour each, or any combination of these.

intensive grazing management: A method for managing grazing resources considering a number of factors and implementing a specified grazing system as detailed in an allotment management plan.

key management area: A portion of range, which, because of its location and grazing value, serves as an indicative sample of range condition, trend, or degree of use.

key management species: Forage species whose use serves as an indicator to the degree of use of associated species.

land tenure adjustment: Any change in land ownership.

licensed use: The portion of a permittee´s grazing preference that is used in a grazing season within an allotment and which is authorized on a grazing license.

locatable mineral: A mineral subject to location under the 1872 mining law. Examples of such minerals include gold, silver, copper, and lead.

long term: A period in time from 5 to 15 years following the beginning of the implementation phase (1984) for the resource management plan.

mineral potential:

high mineral potential-- The geologic environment, the inferred geologic processes, the reported mineral occurences, and the known mines or deposits indicate high favorability for accumulation of mineral resources.

moderate mineral potential-- The geologic environment, the inferred geologic processes, and the reported mineral occurrences indicate moderate favorability for accumulation of mineral resources.

low mineral potential-- The geologic environment and the inferred geologic processes indicate low favorability for accumulation of mineral resources.

very low mineral potential-- The geologic environment and the inferred geologic processes do not indicate favorability for accumulation of mineral resources.

mining district: A section of country usually designated by name and described or understood as being confined within certain natural boundaries, in which gold, silver, or other minerals may be found in paying quantities.

monitoring program: A program designed to measure changes in plant composition, ground cover, animal populations, and climatic conditions on the public rangeland. Vegetation studies will be used to monitor changes in rangeland condition and determine the reason for any changes that are occurring. The vegetation studies consist of actual use, utilization, trend, and climatic conditions.

multiple use: "...the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced diverse resource uses that take into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural, scenic, scientific and historical values; and harmonious and coordinaated management of the various resources without permanent impairment lative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output," (Section 103, Federal Land Policy and Management Act of 1976).

National Register of Historic Places: The official list, established by the Historic Preservation Act of 1966, of the nation's cultural resources worthy of preservation.

off-road vehicle: "Off-Road Vehicle" means any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies.

open designation: Areas on public lands where motor vehicles may be operated, subject only to standard operating regulations.

permittee: One who holds a permit to graze livestock on public land.

periods-of-use (domestic animals): The time of year when domestic animals would be allowed on a specific unit of range, as designated by permit.

plant vigor: The state of health of a plant. The capacity of a plant to respond to growing conditions, to

prescribed burn: The controlled burning of vegetation or vegetative materials for a specific objective.

public lands: Those federal lands administered by the Secretary of the Interior through the Bureau of Land Management.

range condition: The present state of vegetation of a range site in relation to the climax plant community for that site. It is an expression of the relative degree to which the kinds, proportion, and amounts of plants in the present plant community resemble that of the climax plant community for the site. Range condition is basically an ecological rating of the plant community for the site. Four range condition classes are used to express the degree to which the composition of the present plant community reflects that of the climax: Excellent (76-100 percent), Good (51-75 percent), Fair (26-50 percent), poor (0-25 percent).

range improvement: A structure, development, or treatment used to rehabilitate, protect, or improve the public lands to advance range betterment.

rangeland monitoring program: A program designed to measure changes in plant composition, ground cover, animal populations, and climatic conditions on the public rangeland. Vegetation studies will be used to monitor changes in rangeland condition and determine the reason for any changes that are occurring. The vegetation studies consist of actual use, utilization, trend, and climatic conditions.

range site: A distinctive kind of rangeland that differs from other kinds in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differs from that of other range sites in the kind of proportion of species or in total production.

reasonable numbers: The average population estimates for mule deer, antelope, bighorn sheep, and elk over a 15-year period (1961-1975).

regular nonuse: Nonuse of allowable grazing in animal unit months by choice of a livestock operator for any of a variety of reasons.

resource conflict area: One of four subunits of the resource area having similar resource uses and conflicts.

riparian communities: Vegetative communities found in association with either open water or water close to the surface; includes meadows, aspen, and other trees and shrubs in association with streams and other water sources.

riparian habitat (aquatic) (STREAMSIDE): Vegetative communities found in association with streams (both perennial and intermittent) lakes, ponds and other open water.

road: Vehicle route which has been improved and maintained by mechanical means to insure relatively regular and continued use.

scoping process: An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

short term: A period of time, generally five years, during which the initial decisions of the resource management plan will be implemented.

significant impact: An impact to the environment which exceeds a specified threshold. This impact may be beneficial, adverse, direct, indirect, cumulative, and may have short-term or long-term effects.

species, endangered: An animal or plan whose prospects of survival and reproduction are in immediate jeopardy, and is further defined by the Endangered Species Act of 1973.

species, threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and is further defined by the Endangered Species Act of 1973.

sustained yield utilization: A level of removal of vegetative materials, through proper and judicious use levels, which allows sufficient material to remain at the end of a year (or grazing season) to produce the same amount of vegetative material the following year.

trend: The direction of change in range condition or wildlife habitat over a period of time, expressed as upward, static, or downward.

utility corridor: A corridor, through an area, in which all utility transmission facilities, both existing and proposed, are located. Concentration of use results in less area disturbed and a minimum of environmental damage.

utilization: The proportion of a current year´s forage production that is consumed or destroyed by grazing animals. May refer either to a single species or to the vegetation as a whole.

vegetative manipulation projects: Actions taken which alter the existing natural plant communities to achieve the goals of management in a particular area. There are several ways in which vegetation can be altered: 1) with fires, 2) mechanically, which includes chaining, plowing or crushing, 3) chemically, and 4) biologically.

visual resource management (VRM): The planning, design, and implementation of management objectives to provide acceptable levels of visual impacts for all Bureau of Land Management resource management activities.

way: A vehicle route established and maintained solely by the passage of motor vehicles.

wilderness characteristics: Identified by Congress in the 1964 Wilderness Act: namely, size, naturalness, outstanding opportunity for solitude or a primitive and unconfined type of recreation, and supplemental values such as geological, archaeological, historical, ecological, scenic, or other features. It is required that the area possess at least 5,000 acres or more of contiguous public land or be of a size to make practical its preservation and use in an unimpaired condition; be substantially natural or generally appear to have been affected primarily by the forces of nature with the imprint of man being substantially unnoticeable; and have either outstanding opportunities for solitude or a primitive and unconfined type of recreation. Congress said a wilderness area may have supplemental values, which include ecological, geological, or other features of scientific, educational, scenic, or historical value. However, the presence or absence of supplemental values could not make or eliminate an area from wilderness designation.

wilderness management policy: This policy document prescribes the general objectives, policies, and specific activity guidance applicable to all designated Bureau of Land Management wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wilderness areas are developed and described in the wilderness management plan for each unit.

wilderness study area (WSA): A roadless area which has been found to have wilderness characteristics.

wilderness values: Includes the wilderness characteristics and multiple resource benefits of an area.

wild horse herd area: An area of public lands that provides habitat for one or more wild horse herds.

wild horses: All unbranded and unclaimed horses and their progeny that have used public lands on or after December 15, 1971.

woodland: Land producing trees that are typically utilized for nonsaw timber products and sold in units other than board feet.

woodland management: All activities carried out for the primary or subordinate purpose of producing woodland products for consumptive purposes.

woodland management plan: A ten-year plan which sets forth the major activities, including the allowable cut, to be carried out for the primary or subordinate purpose of producing woodland products for consumptive purposes.

woodland products: Any useful tree product produced from woodlands such as: fuelwood, posts, poles, nuts, and Christmas trees.

BIBLIOGRAPHY

Anonymous, Fall, 1982. Nevada Statistical Data by County. Nevada Review of Business and Economics, p. 30-32.

Assessor, Eureka County, Nevada, 1983. Personal communication.

Assessor, Lander County, Nevada, 1983. Personal communication.

Bailey, Robert G. 1976. Ecoregions of the United States, U.S. Department of Agriculture, U.S. Forest Service.

Barngrover, Larry, June 3, 1982. Letter regarding the 1982 mule deer population estimates. Nevada Department of Wildlife, Elko, Nevada.

Blaisdell, James P. and Joseph F. Pechanec, 1949. Effects of Herbal Removal at Various Dates on Vigor of Bluebunch Wheatgrass and Arrowleaf Balsamroot. Ecology vol. 30, no. 3, p. 298-305

Branson, F.A., G.F. Gifford, K.G. Renard, R.F. Hadley and E.H. Reid, editor, 1981. Rangeland Hydrology. Kendall/Hunt Publishing Co., Dubuque, Iowa.

Britton, C.M., F.A. Sneva and R.G. Clark, 1979. Effect of Harvest Date on Five Bunchgrasses of Eastern Oregon. In 1979 progress report, Research in Rangeland Management, Special Report 549. Agricultural Experiment Station, Oregon State University, Corvallis.

Call, Mayo, 1979. Habitat Requirements and Management Recommendations for Sage Grouse (BLM Technical Note). U.S. Department of Interior, Bureau of Land Management, Denver, Colorado.

Clements, F.E., 1949. Dynamics of Vegetation: Selections from the Writings of Frederick E. Clements, B.W. Allred and E.S. Clements, eds. H.W. Wilson, Co., New York.

Coffin, Patrick D. 1982. Lahontan Cutthroat Trout Fishery Management Plan for the Humboldt River Drainage Basin (Draft). Nevada Department of Wildlife. Federal Aid Project F-20-17, Study IX, Job No. 1-P-1.

Cook, C. Wayne, June, 1967. Increased Capacity Through Better Distribution on Mountain Ranges, Utah Farm and Home Science vol. 28, no. 2, p. 39-42.

Corbett, James A., Oct. 20, 1977. Grazing Fees on the Public Lands and Their Place in Range Improvements. Prepared for the National Public Lands Task Force.

Council of Economic Advisors, 1982. Economic Report of the President. U.S. Government Printing Office, Washington, D.C.

Curtis, Neville M., Jr., A.G. Oarrach, and W.V. Sauerwein, Sept. 1977. Estimating Sheet-Rill Erosion and Sediment Yield on Disturbed Western Forest and Woodlands, Woodland - No. 10. U.S. Department of Agriculture, Soil and Conservation Service, Portland, Oregon.

Dahlem, Eugene A., March, 1979. The Mahogany Creek Watershed With and Without Grazing, Proceedings of the Forum - Grazing and Riparian/ Stream Ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Denver, CO.

Duff, Donald A., March 1979. Riparian Habitat Recovery on Big Creek, Rich County, Utah -- A Summary of 8 years of Study. Proceedings of the Forum -- Grazing and Riparian/Stream Ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Denver, CO.

Falk, Robert, April, 1980. Federal Land Bank. Personal communication regarding the value of animal unit months. Reno, Nevada.

Fillo, Frank D., H.D. Radtke and E.P. Lewis, 1978. The Economy of Humboldt and Lander Counties: A Working Model for Evaluating Economic Change. Max C. Fleischmann College of Agriculture, University of Nevada, Reno. Unpublished. M.S. 99.

Garside, Larry J. and John H. Schilling, 1979. Thermal Waters of Nevada, Bulletin 91. Nevada Bureau of Mines and Geology.

Godwin, L.H., E. Johnson, and S.S. Sun, Dec., 1977. Geothermal Land Classification Map, U.S. Dept. of the Interior, U.S. Geological Survey, Conservation Division.

Godfrey, B. and J. Keith, 1982. Economic Analysis for the Schell Grazing EIS. Technical report for the Bureau of Land management, Ely, Nevada.

Great Basin GEM Joint Venture, Jan. 11, 1983a. Antelope/Park Range GEM Technical Report. Reno, Nevada. Contract No. YA-554-RFP2-1054.

Great Basin GEM Joint Venture, Jan. 11, 1983b. Simpson Park Range GEM Technical Report. Reno, Nevada. Contract No. YA-554-RFP2- 1054.

Great Basin GEM Joint Venture, Jan. 11, 1983c. Roberts GEM Technical Report. Reno, Nevada. Contact No. YA-554-RFP2-1054.

Hanley, Thomas A., 1979. Application of an Herbivore-plant Model to Rest-rotation Grazing Management on Shrub-steppe Rangeland. Journal of Range Management, vol. 32, no. 2, p. 115-118.

Hess, Mike, Editor, 1981. Mule Deer Investigations and Hunting Season Recommendations (mimeographed). Nevada Department of Wildlife. Project W-48-12, Study I, Job 1.

Hess, Mike, editor, 1982. Mule Deer Investigations and Hunting Season Recommendations (mimeographed). Nevada Department of Wildlife. Project W-48-13, Study I, Job 1.

Hickey, W.C. Jr. 1971. A Discussion of Grazing Management Systems and Some Pertinent Literature. U.S. Department of Agriculture, U.S. Forest Service, Albuquerque, NM and Lakewood, CO.

Holmgren, Ralph C., and Selar S. Hutchings, Aug. 1972. Salt Desert Shrub Response to Grazing Use. Wildland Shrubs--Their Biology and Utilization (an international symposium held at Utah State University, Logan, Utah, July 1971), edited by C.M. McKell, J.P. Blaisdell and J.R. Goodin, U.S. Department of Agriculture Forest Service General Technical Report INT-1.

Huges, Lee E., 1979. Rest-rotation Grazing Versus Season-long Grazing on Naval Oil Shale Reserve Allotments in Colorado, Rangelands, vol. 1, no. 2, p. 55-56.

Kormondy, Edward J., 1969. Concepts of Ecology. Prentice Hall, New Jersey.

Kothmann, M.M. et. al., 1969. Economics of Stocking Rates and Grazing Systems, Proceedings, Western Section, American Society of Animal Science, vol. 20.

Laycock, W.A., 1970. The Effect of Spring and Fall Grazing on Sagebrush - Grass Ranges in Eastern Idaho, Interim Grassland Congress Proceedings, 11, p. 52-54.

Neilsen, Darwin B. and J.P. Workman, Nov. 19, 1971: The Importance of Renewable Grazing Resources on Federal Lands in the 11 Western States. Circular 155, Utah Agricultural Experiment Station, Logan, Utah.

Nevada Department of Fish and Game, 1977. Input to Shoshone-Eureka Resource Area Planning Documents.

Nevada Department of Wildlife, 1982. Wildlife Habitat Plans for the Future--Input into Land Management Agencies´ Planning Systems, Shoshone-Eureka Resource Area Update (mimeographed). Reno, Nevada. Project No. FW-3-T, Study I; Job 2.

Nevada Division of State Parks, 1981a. Dispersed Recreation in Nevada. Carson City, Nevada.

Nevada Division of State Parks, 1981b. Nevada Statewide Comprehensive Outdoor Recreation Plan. Carson City, Nevada.

Nevada Employment Security Department, 1980. Nevada Employment and Payrolls. Employment Security Research Section, Carson City, Nevada.

Nevada State Engineer´s Office, 1974. Water for Nevada. Division of Water Resources, Carson City, Nevada.

Nevada, State of, Department of Taxation, 1981. Local Government Red Book Ad Valorem Tax Rates, Budget Summaries for Nevada Local Governments, Fiscal Year 1980-81. Carson City, Nevada.

Nevada, State of, Employment Security Department, 1982. Area Labor Review, Balance of State, Carson City, Nevada.

Nevada, State of, Nevada Tax Commission, 1981. Comparative Statements of Segregations of the Tax Rolls by Counties and Classes, 1980-81. Carson City, Nevada.

Nevada, State of, Planning Coordinator´s Office, 1979. Population Projections to the Year 2000 for the State and its Counties. Carson City, Nevada.

Pearson, L.C., 1964. Effect of Harvest Date on Recovery of Range Grasses and Shrubs, Agronomy Journal vol. 56, no 1, p. 80-82.

Range Studies Task Group, 1981. Nevada Range Monitoring Procedures.

Resource Concepts, Inc., 1981. Potential Impacts of MX Deployment on Ranch Management and Ranch Economics. Under contract to the U.S. Air Force, Carson City, Nevada.

Reynolds, T.D., and C.H. Trost, 1980. The Response of Native Vertebrate Populations to Crested Wheatgrass Planting and Grazing of Sheep, Journal of Range Management 33(2), p. 122-125.

Rogers, C.L., F.J. Kleinhampl. J.I. Ziony, and W. Danilchik, 1970. *Phosphate Occurrences in Nye County and Adjacent Areas, Nevada.* U.S. Department of the Interior, U.S. Geological Survey, Professional paper, 700-C.

Schemnitz, Sanford D., 1980. *Wildlife Management Techniques Manual.* Wildlife Society, Inc., Washington, D.C.

Shiflet, T.N. and H.F. Heady, 1971. *Specialized Grazing Systems--Their Place in Range Management.* U.S. Department of Agriculture, Soil Conservation Service, SCS-TP-152.

Stoddard, Laurence A. and Arthur D. Smith, 1955. *Range Management.* McGraw-Hill Book Company, New York.

Stoddard, L.A., A.D. Smith, and T.W. Box, 1975. *Range Management,* third edition. McGraw Hill, New York.

Thomas, J.R., C. Maser, and J.E. Rodiek, 1979. Riparian Zones in Managed Rangeland--Their Importance to Wildlife. In *Proceedings of the Forum -- Grazing and Riparian/Stream Ecosystems,* Oliver B. Cope, ed. Trout Unlimited, Inc., Denver, CO.

Torell, Allen, W.D. Champney, C.T.K. Ching, J.R. Garrett, J.A. Knechel, G. Lucier, J.G. McNeely, Jr., G.L. Myer, C. Povolny, R.L. Shane, and J.F. Yanagida, 1980. *Economic Impact of BLM Grazing Allotment Reductions on Humboldt County.* Division of Agricultural and Resource Economics, University of Nevada, Reno, Nevada.

Trlica, M.J., Jr., et. al., 1971. Defoliation Effects on Carbohydrate Reserves of Desert Species, *Journal of Range Management* vol. 24, no. 6, p 21-17

Tsukamoto, G., ed. 1979. *Big Game Investigations and Hunting Season Recommendations.* Nevada Department of Fish and Game (now Nevada Department of Wildlife). Reno, Nevada.

Tueller, Paul T., March, 1973. Secondary Succession Disclimax, and Range Condition Standards in Desert Shrub Vegetation, *Arid Shrub-lands Proceedings of the Third Workshop of the U.S./Australia Rangelands Panel.* Tucson, Arizona.

Ulrich, T., C.T.K. Ching, J.R. Garrett and A. Torell, 1980. *Aggregating Range Cattle Firms: A Test of Alternative Methods,* Division of Agriculture and Resource Economics, Max C. Fleichmann College of Agriculture, University of Nevada, Reno. Unpublished research report.

University of Nevada, Reno, September 1982. Nevada Population Forcasts: 1980-2000, *Nevada Review of Business and Economics,* Fall edition.

U.S. Department of Commerce, Bureau of the Census, 1981. *1980 Census of Population and Housing.*

U.S. Department of Commerce, Bureau of the Census, 1982. *Population Reports, Nevada.*

U.S. Department of Commerce, Bureau of Economic Analysis, 1982. *Regional Economic Information System.*

U.S. Department of the Interior, Bureau of Land Management, August, 1971. Shoshone Resource Area Unit Resource Analysis Steps 1-4, Management Framework Plan Steps 1-3. Battle Mountain District, Nevada.

U.S. Department of the Interior, Bureau of Land Management, Jan. 1973. Eureka Resource Area Unit Analysis Steps 1-4, Management Framework Plan Steps 1-3. Battle Mountain District, Nevada.

U.S. Department of the Interior, Bureau of Land Management, May 7, 1977. Shoshone Unit Resource Analysis. Battle Mountain District, Nevada.

U.S. Department of the Interior, Bureau of Land Management, November 30, 1979. Mineral Inventory for the Antelope Range Roadless Area Eureka and Nye Counties, Nevada. Battle Mountain District, Nevada.

U.S. Department of the Interior, Bureau of Land Management, 1981. Wilderness Management Policy, Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management, 1981b. Public Lands Statistics 1981. Government Printing Office, Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management, August 31, 1982. Nevada Wildlife Manual Supplement 6630, Release NV6-41, Nevada State Office, Reno.

U.S. Department of the Interior, Bureau of Land Management, October 15, 1982. Rangeland Improvement Policy. Enclosure 1-1 in Instruction Memorandum No. 83-27. Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management, 1982. Inventory of Wetland-Riparian Habitats--Shoshone-Eureka Resource Area (Typed). Battle Mountain District, Nevada.

U.S. Department of the Interior, Bureau of Land Management, 1982b. Draft Grazing Environmental Impact Statement, Schell Resource Area, Ely District, Nevada.

U.S. Department of the Interior, Bureau of Land Management, January 1983. Wild Free-Roaming Horse and Burro Guidance, Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management, 1983. Shoshone Eureka Wilderness Technical Report. Battle Mountain District, Nevada.

U.S. Department of the Interior, Bureau of Land Management. Draft BLM Manual 4430 and 4440.

U.S. Department of the Interior, National Park Service, February 6, 1979. National Register of Historic Places. Federal Register vol. 44, no. 26 and monthly supplements through April 12, 1983.

U.S. Department of the Interior, U.S. Geological Survey, Conservation Division, April, 1980. Lands Valuable for Oil and Gas, Nevada (map). Office of the Area Geologist, Pacific Area.

Vale, Thomas R., Spring, 1979. Use of Public Rangelands in the American West, Environmental Conservation vol. 6, no. 1.

Van Poolen, H. Walt and John R. Lacy, 1979. Herbage Responses to Grazing Systems and Stocking Intensities, Journal of Range Management. Vol. 32, no. 4, p. 250-253.

Western States Sage Grouse Committee, June, 1974. Guidelines for Habitat Protection in Sage Grouse Range. Input for Shoshone-Eureka Resource Area Management Framework Plan. Nevada Department of Wildlife.

Western Utility Group Regional Corridor Committee, May 1, 1980. Western Regional Corridor Study.

INDEX

Areas of Critical Environmental Concern........................ 1-2

Cultural Resources............. 3-12, 4-13-4-15, 4-30-4-32, 4-47-49, 4-63

Economic Characteristics....... 3-24-3-30

Economic Development Alternative................... 2-22-2-8, 4-40-4-56

Energy-Utilities............... 3-24, 4-18-19, 4-35, 4-52, 4-64-4-65

Implementation................. 2-30-2-38

Land Tenure Adjustments........ 1-2, 2-8, 2-15, 2-22, 2-29, 4-2, 4-23, 4-40, 4-57

Livestock Management........... 1-3, 2-3-2-5, 2-12-2-14, 2-19-21, 2-26-28, 2-29, 3-7, 4-8-4-11, 4-42-46, 4-60-4-61

Minerals 3-21, 4-18, 4-27-4-29, 4-51-4-52, 4-64

No Action Alternative.......... 2-29, 4-57-4-67

Planning Criteria.............. 1-3-1-6

Planning Issues................ 1-2-1-3

Preferred Resource Management Plan.......................... 2-8-2-14, 4-2-4-22

Public Involvement............. 6-1

Recreation..................... 3-20, 4-17-4-18, 4-34, 4-51, 4-64

Resource Conflict Areas........ 2-2-2-7,

Resource Protection Alternative................... 2-15-2-21, 4-23-4-39

Scoping........................ 6-1-6-2

Social Characteristics......... 3-30, 4-20, 4-37, 4-53, 4-56, 4-65

Standard Operating Procedures.. 2-35-37

Threatened and Endangered Species........................ 3-4, 4-7, 4-26

Utility Corridors.............. 1-3, 2-11, 2-15, 2-25, 3-29, 3-24

Visual Resource Management.....
3-13, 4-15-4-16, 4-32, 4-49-4-50, 4-63-4-64

Wilderness.....................
1-1, 1-2, 2-8, 2-15, 2-22, 2-29, 4-16-4-17, 4-33, 4-50-4-51, 4-64

Wild Horses....................
1-3, 2-12-2-14, 2-19-2-21, 2-26-2-28, 2-29, 3-4-3-7, 4-8, 4-27, 4-42, 4-60

Wildlife Habitat...............
1-3, 2-12-2-14, 2-19-2-21, 2-26-2-28, 2-29, 3-2-3-4, 4-5-4-7, 4-23-4-27, 4-41-4-42, 4-57-4-60

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

BLM BM-PT-83-004-4410
GPO 785-056/77239

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047

Form 1279-3
(June 1984)

BORROWER'S

HD 243 .N3 S56 1
Draft RMP and EI
Shoshone-Eureka

DATE LOANED

BORROWER

USDI - BLM

HD 243 .N3 S56 1983

Draft RMP and EIS for
Shoshone-Eureka RA, Nevada

BLM LIBRARY
SC-653, BLDG. 50
DENVER FEDERAL CENTER
P. O. BOX 25047
DENVER, CO 80225-0047